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Blow flies (Insecta: Diptera: Calliphoridae) from Indochina

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Indochinese calliphorid flies (91 species including one undetermined sp.) are reviewed. Lists of new localities, distributions, and ecological data are also given. Two new species, *Verticia indochinica* sp. nov. and *V. quatei* sp. nov., are described and illustrated. Thirty-nine species are recorded for the first time from the area of Vietnam, Laos, and Cambodia. Keys are provided for the identification of 91 species recorded from the area, excluding the following seven nominal taxa in need of revision: *Phumosia violacea* (Séguy, 1925), *Isomyia viridana* (Townsend, 1917), *I. cybele* (Séguy, 1949), *I. didieri* (Séguy, 1949), *I. inops* (Séguy, 1949), *I. proxima* (Séguy, 1946), and *Metallea minuta* Séguy, 1946. One new synonymy is established, based on type-examination: *Bengalia xanthopyga* Senior-White, 1924 (=*B. asymmetria* Kurahashi and Tumrasvin, 1979, syn. nov.).
Key Words: Blow flies, Calliphoridae, fauna, new species, Laos, Vietnam, Cambodia.

Introduction

The adults of Calliphoridae are known as blow flies, blue bottles, or green bottles. Several species of these flies are of great medical and veterinary importance due to their roles in myiasis and disseminating agents of infectious diseases. Very little information is available for the family Calliphoridae from Indochina. The main parts of this study were conducted by the junior author (L. C.) in the fulfillment of a training programme conducted under the technical agreement between the Thai and Japanese Governments for the "Promotion of Provincial Health Services" project.

A number of papers are particularly useful when studying the blow flies of Indochina. James (1977) published the chapter on the Calliphoridae in "A Catalog of the Diptera of the Oriental Region" including some Indochinese species. Inder Singh *et al.* (1979) published a preliminary key to the common calliphorid flies of Peninsular Malaysia. Hii Lu King and Kurahashi (1977) and Kurahashi (1989) published a key to the species of *Phumosia* from Malaysia. Peninsular Malaysia shares a rather large number of blow flies with Thailand and most probably also with Indochina. The works on Chinese blow flies (Fan 1965, 1992; Xue and Chao 1996) are useful for the identification of Indochinese species, but these publications are writ-

ten in Chinese. To our knowledge, only one report has been made by a local entomologist (Thinh 1988), providing a practical key written in Vietnamese. It may be useful for local students to identify the previously recorded Vietnamese species.

The present paper reviews 91 species including two species new to science, and 39 of them are recorded for the first time from the area of Indochina including Vietnam, Laos, and Cambodia. Keys are provided to the subfamilies, genera, and species recorded from the area, excluding the following seven nominal taxa in need of revision: *Phumosia violacea* (Séguy, 1925), *Isomyia viridana* (Townsend, 1917), *I. cybele* (Séguy, 1949), *I. didieri* (Séguy, 1949), *I. inops* (Séguy, 1949), *I. proxima* (Séguy, 1946), and *Metallea minuta* Séguy, 1946.

Materials and Methods

This study is based primarily on 1,708 specimens, accumulated at the Bernice P. Bishop Museum (currently Bishop Museum) in Honolulu from 1960 to 1968. Some additional specimens were also provided from the Department of Medical Zoology, Tokyo Medical and Dental University, Tokyo. Acronyms for institutions housing specimens are as follows: BPBM, Bernice P. Bishop Museum, Honolulu; NIID, Reference Museum, Department of Medical Entomology, National Institute of Infectious Diseases, Tokyo; TMDU, Department of Medical Zoology, Tokyo Medical and Dental University, Tokyo.

In order to save space, only references recording or otherwise referring to the fauna of Indochina have been listed. Taxonomic references (author, year: page) are used extensively, but not all have been included in the References. Other relevant bibliographic information is found in the Oriental Catalogue (James 1977). Type localities are given as they were originally reported, but they are not strict quotations. Modern names of countries are given in brackets. Locality and collector names for specimens examined are cited as shown on the label of the specimen. The countries in which each species is distributed are listed roughly in east-west and north-south sequences. Anatomical terminology mainly follows Senior-White *et al.* (1940) and measurement of the frons was made in a similar manner to Fan (1965), so that the frons index herein is the same as Fan's "index of frons". The classification of higher taxa such as families follows that of James (1977).

For the sake of convenience, a few keys contain several unrecorded species that are likely to be found in the area. Data of bionomics and localities are included in the text whenever available. Newly recorded species and localities are preceded by an asterisk.

Family **Calliphoridae**

Key to the subfamilies of Calliphoridae

1. Stem vein of wing without setulae on dorsal side of basal section 2
– Stem vein of wing with distinct setulae on postero-dorsal side of basal section 3
2. Anterior lappet of metathoracic spiracle with conspicuous, backwardly directed tuft of long hairs; postscutellum forming definite convex swelling, latter

microrugose and sometimes showing slight trace of shallow median incision; postabdomen of ♀ nontelescopic, modified for macro-larvipary; large, tachinid-like flies.....Subfamily Ameniinae (p. 187)

– Anterior lappet of metathoracic spiracle bare or at most with very few, small, inconspicuous hairs; postscutellum not at all convex or at most with rudimentary trace of swelling, not as above; postabdomen of ♀ forming telescopic ovipositor, but sometimes short in larviparous species for deposition of first instar larvae .....Subfamily Calliphorinae (p. 188)

3. Subalar knob with erect hairs; thoracic squama largely lobulate, subtruncate at apex, concave on outer margin, hairy on parts of upper surface; upper occiput without glossy submarginal band.....Subfamily Chrysomyinae (p. 211)

– Subalar knob bare, or without distinct hairs; thoracic squama usually tongue-like, narrowly rounded at apex, straight on outer margin, rarely lobulate in some species of *Isomyia*; upper occiput with bare, glossy submarginal band extending almost entirely across its width.....Subfamily Rhiniinae (p. 216)

Subfamily **Ameniinae**

Key to the tribes and genera of Ameniinae

1. Head almost always with very large facial carina; propleuron and prosternum almost always hairy; hind tibia with apical *pv*; outer *ph* situated mesad of *prs*; ventral surface of costa setulose between apices of subcostal (Sc) and first longitudinal (R_1) veins.....Tribe Ameniini, *Silbomyia*

– Head without facial carina; propleuron bare; prosternum bare, sometimes hairy; hind tibia without apical *pv*; outer *ph* situated laterad of *prs*; ventral surface of costa bare between apices of subcostal (Sc) and first longitudinal (R_1) veins. No record from Indochina.....Tribe Catapicephalini, *Catapicephala*

Tribe **Ameniini**
Genus ***Silbomyia***

Silbomyia Macquart, 1843: 274 (117). Type species: *Musca fuscipennis* Fabricius, 1805, designated by Engel (1925: 348).

****Silbomyia asiatica*** Crosskey, 1965

Silbomyia asiatica Crosskey, 1965: 80. Type locality: Biserat, Thailand.

Length. 11.5 mm.

Specimens examined. VIETNAM: 1♂, Nha Trang, 17–26.xi.1960, C. M. Yoshimoto (BPBM).

Bionomics. Nothing is known.

Distribution. *Vietnam, Thailand, Malaysia (as Malaya), and India.

Subfamily **Calliphorinae**

Key to the tribes and genera of Calliphorinae

1. Propleuron hairy 2
– Propleuron bare 13
2. Thoracic squama bare on upper surface 3
– Thoracic squama more or less hairy on upper surface ..... Tribe Calliphorini (in part) 7
3. Posterior part of suprasquamal ridge with tuft of black, erect hairs on small, well-defined, black sclerite ..... Tribe Luciliini 4
– Posterior parasquamal tuft absent 6
4. Supraspiracular convexity clothed with long, upstanding, fine hairs 5
– Supraspiracular convexity bare or pubescent ..... *Lucilia*
5. Legs in ♂ more or less fringed; hypopygium strongly developed; generally large flies, more than 15 mm in length ..... *Hypopygiopsis*
– Legs not fringed in either sex; hypopygium in ♂ normal; medium and small flies, less than 10 mm in length ..... *Hemipyrellia*
6. Anterior part of suprasquamal ridge bare; distance between right and left presutural *ac* rather large; mesothoracic spiracle rather large, sometimes swollen ..... Tribe Phumosiini, *Phumosia*
– Anterior parasquamal tuft present, or, if not, distance between right and left presutural *ac* small; mesothoracic spiracle smaller, not particularly swollen ..... Tribe Calliphorini (in part) 7
7. Presutural *ac* usually 1, rarely absent; facial carina more or less developed ..... *Polleniopsis*
– Presutural *ac* 2; facial carina absent 8
8. Thoracic squama bare on upper surface; anterior parasquamal tuft developed. No record from Indochina ..... *Melinda*
– Thoracic squama more or less hairy on upper surface or, if not, anterior parasquamal portion bare 9
9. Male frons very broad; eyes dichoptic in ♂ and ♀; 3rd antennal segment elongate, more than 4 times as long as 2nd; presutural *ia* absent ..... *Tainanina*
– Eyes holoptic or subholoptic in ♂ and dichoptic in ♀; length of 3rd antennal segment variable; presutural *ia* present or absent 10
10. Body medium-sized, usually 6–8 mm in length, largely testaceous, with yellow femora and tibiae. No record from Indochina ..... *Tricycleopsis*
– Body small- to large-sized, blackish, with metallic blue abdomen and black legs 11
11. Body small- to medium-sized, usually less than 8 mm in length; distance between right and left presutural *ac* small (cf. Kurahashi 1970: 521, fig. 1b) ..... *Onesia*
– Body large-sized, usually more than 8 mm in length; distance between right and left presutural *ac* rather large (cf. Kurahashi 1970: 521, fig. 1a) 12
12. Presutural *ia* developed ..... *Calliphora*
– Presutural *ia* absent ..... *Aldrichina*
13. Prosternum usually hairy, bare in *Verticia*; thorax not clothed with golden curly hairs; eyes dichoptic in ♂ and ♀; body at least partly yellowish ..... Tribe Bengalini 14

– Prosternum bare; thorax usually with golden curly hairs, but if not, eyes holoptic in ♂ and body black in ♂ and ♀ 16

14. Vibrissae inserted well above oral margin or, if more or less level with oral margin, then face not deeply sunk; arista long-plumose to tip; frontal stripe clothed with rather long setulae ..... *Bengalia*

– Vibrissae inserted at level of oral margin; face more or less deeply sunk; arista plumose or pectinate; frontal stripe without setulae 15

15. Arista plumose; facialia and face normally formed; prosternum bare; proclinate *ors* and *ov* developed in ♂ ..... *Verticia*

– Arista pectinate; facialia diverging for greater part of their length, then rapidly converging above oral margin; prosternum hairy; neither proclinate *ors* nor *ov* present in ♂. No record from Indochina ..... *Booponus*

16. Thorax clothed with fine, tawny-colored, curly hairs; presutural *ia* absent; body at least in part testaceous yellow; parafacialia bare; *ac* 0–1+1–2 ..... Tribe Polleniini, *Dexopollenia*

– Body without curly hairs; presutural *ia* present; thorax fuscous to black; abdomen variable in colour; parafacialia setulose; *ac* 1–2+3. No record from Indochina ..... Tribe Melanodexiini

Tribe **Calliphorini**
Genus ***Aldrichina***

Aldrichiella Rohdendorf, 1931: 177. Type species: *Calliphora grahami* Aldrich, 1930, by original designation. [Preoccupied]

Aldrichina Townsend, 1934: 111. Type species: *Calliphora grahami* Aldrich, 1930, by preserved designation.

Aldrichina grahami (Aldrich, 1930)

Calliphora grahami Aldrich, 1930: 78. Type locality: "Suifu, Szechuen Province" [China].

Aldrichina grahami: Thinh 1988: 15 (Vietnam).

Specimens examined. No available material in our collection.

Bionomics. Adults are attracted to decaying matter in towns located more than 1,000 m above sea level in the northern part of Vietnam.

Distribution. Russia (East Siberia, Far East), Japan, Korea, China, Taiwan, Vietnam, and USA (California, Hawaii).

Genus ***Polleniopsis***

Polleniopsis Townsend, 1917: 201. Type species: *Polleniopsis pilosa* Townsend, 1917, by original designation.

Key to the species of *Polleniopsis*

1. Legs light brown at least on femora and tibia; scutellum fulvous yellow; *st* 1+1 ..... *P. gressitti*
– Legs fuscous to black at most, with tibiae and knees brownish; scutellum black, with brownish-grey dusting; *st* 1–2+1 2
2. Legs entirely fuscous to black; *st* 1–2+1 [Laos] ..... *P.* sp.
– Tibiae and knees brownish; *st* 1+1 or 2+1 [Vietnam] 3
3. Facial carina well developed; *st* 1+1 ..... *P. annamensis*
– Facial carina poorly developed, broad, low and round on lower part; *st* 2+1 ..... *P. dalatensis*

Polleniopsis annamensis Kurahashi, 1972

Polleniospsis annamensis Kurahashi, 1972: 722. Type locality: 6 km S of Dalat, Vietnam.

Length. 6.5 mm.
Specimen examined. Holotype ♂ (Bishop 9845) in BPBM.
Bionomics. Nothing is known.
Distribution. China (Hainan I.) and Vietnam.

Pollenopsis dalatensis Kurahashi, 1972

Polleniopsis dalatensis Kurahashi, 1972: 720. Type locality: 6 km S of Dalat, Vietnam.
Polleniopsis dalatensis: Fan 1992: 509 (Vietnam); Xue and Chao 1996: 1425 (Vietnam); Fan 1997: 365 (Vietnam).

Length. 5.5–7.0 mm.
Specimens examined. Holotype ♂ (Bishop 9844) and paratypes (4♂ 2♀) in BPBM.
Bionomics. Nothing is known.
Distribution. China (Hainan I.) and Vietnam.

Polleniopsis gressitti Kurahashi, 1972

Polleniopsis gressitti Kurahashi, 1972: 717. Type locality: Dalat, Vietnam.

Length. 7.0 mm.
Specimen examined. VIETNAM: 1♂, Dalat, 1,500 m, 11.ix.1960, J. L. Gressitt (BPBM).
Bionomics. Nothing is known.
Distribution. Vietnam.

Polleniopsis sp.

The present species is similar to *Polleniopsis annamensis* in having *ac* 1+2 and *st* 1–2+1, but it can be distinguished by leg coloration: entirely fuscous to black. The condition of the specimens is too poor to fully evaluate the specific status.

Length. 8.0 mm.

Specimens examined. LAOS: 1♂, Vientiane Prov., Vientiane, 29.vii.1965, native collector (BPBM); 2♀, Vientiane Prov., Ban Van Eue, 30.ix.1965, 15.v.1966, native collector (BPBM).

Bionomics. Nothing is known.

Distribution. Laos.

Genus ***Onesia***

Onesia Robineau-Desvoidy, 1830: 365. Type species: *Musca sepulcralis* Meigen, 1826, designated by Hendel (1901: 31).

**Onesia parafacialis* Kurahashi and Tumrasvin, 1979

Onesia parafacialis Kurahashi and Tumrasvin, 1979: 302. Type locality: Khao Yai, Thailand.

Length. 3.0–4.5 mm.

Specimens examined. LAOS: 4♂ 6♀, Ban Theuong, 1,035 m, 18 km NW of Xieng Khouang, 2–6.viii.1960, R. E. Leech (BPBM).

Bionomics. Nothing is known.

Distribution. Thailand and *Laos.

Genus ***Tainanina***

Tainanina Villeneuve, 1926: 271. Type species: *Tainanina grisella* Villeneuve, 1926, by monotypy (=*Pollenia pilisquama* Senior-White, 1925).

Key to the species of *Tainanina*

1. One proclinate and 1 reclinate *ors* developed in ♂ and ♀ .....*T. pilisquama*
– No *ors* in ♂, 2 proclinate and 1 reclinate *ors* developed in ♀.....*T. sarcophagoides*

**Tainanina pilisquama* (Senior-White, 1925)

**Pollenia pilisquama* Senior-White, 1925: 84. Type locality: Tainan, Formosa [Taiwan].

Length. 5.3 mm.

Specimen examined. LAOS: 1♀, Vientiane, Ban Van Eue, 30.ix.1965, native

collector (BPBM).

Bionomics. Nothing is known.

Distribution. Taiwan, China (Guangdong, Macau), *Laos, Philippines (Palawan), Malaysia (as Borneo), Indonesia (Java, Bali), India (Assam), and Sri Lanka.

Tainanina sarcophagoides (Malloch, 1931)

Calliphora sarcophagoides Malloch, 1931: 192. Type locality: Pahang, Malaysia (Malaya).

Tainanina sarcophagoides: Kurahashi 1978: 4 (Vietnam); Fan 1992: 502 (Vietnam); Xue and Chao 1996: 1432 (Vietnam); Fan 1997: 337 (Vietnam).

Length. 5.0–5.5 mm.

Specimens examined. VIETNAM: 1♂, 6 km SW [of] Dalat, 1,550 m, 11.ix.1960, J. L. Gressitt (BPBM); 1♂, 22 km S of Nha Trang, 20–26.xi.1960, [C.] M. Yoshimoto (BPBM).

Bionomics. Nothing is known.

Distribution. Japan (Ryukyu Is.), Taiwan, Philippines, Vietnam, Thailand, Malaysia (as Malaya and Borneo), Indonesia (Lombok, Irian Jaya), Papua New Guinea (New Guinea, Bismarck Arch.), and Solomon Islands.

Tribe **Phumosiini**
Genus ***Phumosia***

Phumosia Robineau-Desvoidy, 1830: 427. Type species: *Phumosia abdominalis* Robineau-Desvoidy, 1830, by monotypy.

Key to the species of *Phumosia*

1. Sternopleural bristles 2+1; hind tibia with 3–4 *ad*; wings infuscated along marginal and submarginal areas ..... *P. abdominalis*
– Sternopleural bristles 1+1; hind tibia with 2 *ad*; wings hyaline 2
2. Thoracic dorsum largely fuscous ..... *P. indica*
– Thoracic dorsum testaceous-orange, with trace of median broad, fuscous stripe ..... *P. coomani*
– Thoracic dorsum entirely testaceous-orange ..... *P. testacea*

**Phumosia abdominalis* Robineau-Desvoidy, 1830

Phumosia abdominalis Robineau-Desvoidy, 1830: 427. Type locality: Timor [probably Indonesia].

Length. 9.0–11.0 mm.

Specimens examined. CAMBODIA: 2♀, Kiri Rom, 700 m, 31.iii.1961, 1–7.iv. 1961, N. R. Spencer (BPBM).

Bionomics. Nothing is known.

Distribution. *Cambodia, Malaysia (as Borneo), Indonesia (Sumatra, Sulawesi, Maluku, Timor), and Philippines (Luzon).

Phumosia coomani Séguy, 1948

Phumosia coomani Séguy, 1948: 146. Type locality: Tonkin [Vietnam].
Phumosia coomani: Thinh 1988: 15 (Vietnam).
Caiusa coomani: Xue and Chao 1996: 1454 (Vietnam); Fan 1997: 443 (Vietnam).

Specimens examined. No available material in our collection.

Bionomics. Nothing is known.

Distribution. Japan (Ryukyu Is.), China (Hebei, Zhejian, Sichuan, Hunan, Guangxi, Guangdong, Hainan I.), Vietnam, and Malaysia (as Malaya).

Phumosia indica (Surcouf, 1914)

Caiusa indica Surcouf, 1914: 53. Type locality: Trichinopoly, India.

Length. 6.5–9.5 mm.

Specimens examined. VIETNAM: 2♂, Ban Me Thout, 500 m, 20–24.xii.1960, [C.] M. Yoshimoto (BPBM); 3♂ 1♀, M'Drak, E of Ban Me Thout, 4[00]–600 m, 8–19.xii.1960, C. M. Yoshimoto (BPBM).

Bionomics. Nothing is known.

Distribution. Taiwan, *Vietnam, Malaysia (as Malaya and Borneo), Indonesia (Java, Sulawesi), India, and Sri Lanka.

****Phumosia testacea*** (Senior-White, 1923)

Caiusa testacea Senior-White, 1923: 310. Type locality: Emelina Estate, Maskeliya, Ceylon [Sri Lanka].

Length. 5.0–7.0 mm.

Specimen examined. LAOS: 1♂, Wapikhamthong Prov., Wapi, 15.ix.1967, native collector (BPBM).

Bionomics. Found breeding in a frog's egg mass.

Distribution. Taiwan, Philippines (Luzon), *Laos, Thailand, Malaysia (as Malaya and Borneo), Papua New Guinea (Bougainville I.), India, and Sri Lanka.

Phumosia violacea (Séguy, 1925)

Caiusa violacea Séguy, 1925: 441. Type locality: Cambodia.
Caiusa violacea: Séguy 1946: 83 (Laos).

Specimens examined. No available material in our collection.
Bionomics. Nothing is known.
Distribution. Laos and Cambodia.

Tribe **Luciliini**
Genus ***Lucilia***

Lucilia Robineau-Desvoidy, 1830: 452. Type species: *Musca caesar* Linnaeus, 1758, designated by Macquart (1834: 162).

Key to the species of *Lucilia*

1. Basicosta yellow; subcostal sclerite pubescent, without upstanding hairs; postsutural *ac* 3; body cupreous or metallic green 2
– Basicosta black; subcostal sclerite with upstanding hairs; postsutural *ac* 2; body metallic green or blue, sometimes with purple tinge 3
2. ♂: abdomen elongate, somewhat arched in profile; abdominal sternites with tuft of long hairs; hypopygium prominent. ♀: body cupreous with dense pruinosity; cerebrale bearing only 1 occipital hair on each side ..... *L. cuprina*
– ♂: abdomen more or less oval, not arched in profile; abdominal sternites without tufts of long hairs; hypopygium inconspicuous. ♀: body metallic green, sometimes golden with sparse pruinosity; cerebrale bearing 5–8 occipital hairs on each side ..... *L. sericata*
3. Tergites 3–5 without marginal band; 1st pair of postsutural *ac* more anterior than 2nd pair of postsutural *dc* 4
– Tergites 3–5 each with dark marginal band; 1st pair of postsutural *ac* at same level or slightly posterior to 2nd pair of postsutural *dc* 5
4. Tibiae brownish; alar squama entirely infuscated, with tuft of blackish-brown hairs on inner lower margin ..... *L. porphyrina*
– Tibiae black; alar squama pale brown, sometimes whitish, with tuft of yellowish-white or brown hairs on inner lower margin. No record from Indochina ..... *L. ampullacea* Villeneuve, 1922
5. Alar squama creamy, with tuft of yellowish-white hairs at inner lower margin 6
– Alar squama fuscous brown, usually with tuft of blackish-brown, sometimes brown hairs at inner lower margin 7
6. Thoracic squama largely infuscated; occiput with only 1 row of black postocular setae; frons index 0.19–0.20 in ♀. No record from Indochina ..... *L. sinensis* Aubertin, 1933
– Thoracic squama pale, brownish on disc; occiput with more than 2 irregular rows of black postocular setae; frons index 0.22–0.23 in ♀ ..... *L. bazini*
7. Body metallic blue; narrowest part of male frons broader than distance between two posterior ocelli: parafacialia broader than width of 3rd antennal segment in ♀; frons index in ♀ 0.23–0.25 [usually found in montane forests more than 1,500 m above sea level] ..... *L. papuensis*
– Body metallic green; narrowest part of frons in ♂ distinctly narrower than distance between posterior ocelli; parafacialis as broad as, or narrower than, width of 3rd antennal segment in ♀; frons index 0.21 in ♀ [usually found in low-

land forests].....*L. hainanensis*

Lucilia bazini Séguy, 1934

Lucilia bazini Séguy, 1934: 15. Type locality: Zi-ka-wei, Kou-ling [China].
Lucilia bazini bazini: Thinh 1988: 15 (Vietnam).

Length. 10.0–10.5 mm.

Specimens examined. VIETNAM: 1♂, Dalat, 1,500 m, 29.iv.–4.v.1960, L. W. Quate (BPBM); 2♂ 3♀, Dilinh, 1,200 m, 22–26.iv.1960, S. Quate and L. [W.] Quate (BPBM); 1♂, Ap Hung-Lam, 2 km NW of Dilinh, 1,100 m, 29.ix.–5.x,1960, C. M. Yoshimoto (BPBM). LAOS: 1♂, Vientiane Prov., Ban Van Eue, 30.ii.1965, native collector (BPBM); 1♀, Wapikhamthong Prov., Wapi, 15.vii.1967, native collector (BPBM).

Bionomics. Nothing is known.

Distribution. Japan, Korea, China, Vietnam, and *Laos.

Lucilia cuprina (Wiedemann, 1830)

Musca cuprina Wiedemann, 1830: 654. Type locality: China.
Lucilia cuprina: Séguy 1946: 831 (Laos); Thinh 1988: 15 (Vietnam).
Lucilia (Phaenicia) cuprina cuprina: Xue and Chao 1996: 1444 (Laos).
Lucilia (Phaenicia) cuprina: Fan 1997: 241 (Vietnam, Laos).

Length. 5.0–10.0 mm.

Specimens examined. VIETNAM: 3♂ 3♀, Phan Thiet, 4–7.xi.1960, C. M. Yoshimoto (BPBM); 2♀, 20 km N of Pleiku, 650 m, 9.v.1960, L. W. Quate (BPBM); 1♂ 2♀, 15 km NW of Dalat, 1,850 m, 5.v.1960, S. Quate (BPBM); 2♂, Dalat, 1,500 m, 29.iv.–4.v.1960, S. Quate (BPBM). LAOS: 1♀, Borikhane Prov., Paksane, 3.xii.1965, native collector (BPBM); 1♀, Sayaboury Prov., Sayaboury, 12.iii.1966, native collector (BPBM). CAMBODIA: 2♂, Ph. Chisau, 40 km S of Phnom Penh, 20 m, 29.iv.1961, N. R. Spencer (BPBM).

Bionomics. Occasionally it is a causative agent of animal myiasis.

Distribution. Japan, Taiwan, Korea, China, Vietnam, Laos, *Cambodia, Australia, India, Africa, and North and South America.

Lucilia hainanensis Fan, 1965

Lucilia bazini hainanensis Fan, 1965: 176. Type locality: Hainan Island, Guangdong Prov. [currently Hainan Prov.], China.
Lucilia bazini hainanensis: Thinh 1988: 15 (Vietnam).

Specimens examined. No available material in our collection.

Bionomics. Adults are commonly found in mountainous areas.

Distribution. Taiwan, China (Hainan I.), Vietnam, and Malaysia (as Malaya and Borneo).

Lucilia papuensis Macquart, 1842

Lucilia papuensis Macquart, 1842: 141. Type locality: D'Offak, terre des Papoux [Papua New Guinea].
Lucilia papuensis: Séguy 1946: 83 (Laos); Thinh 1988: 15 (Vietnam).
Lucilia ampullacea: Thinh 1988: 15 (Vietnam). [Misidentified]
Lucilia (Luciliella) papuensis: Xue and Chao 1996: 1447 (Laos); Fan *et al.* 1997: 208 (Laos).

The record of *L. ampullacea* from Vietnam was due to misidentification of the present species (Thinh, personal communication).

Length. 6.0–12.0 mm.

Specimens examined. VIETNAM: 1♀, Ap Hung-Lam, 21 km NW of Dilinh, 110 m, 29.ix.–5.x.1960, C. M. Yoshimoto (BPBM); 2♂, Dilinh, 1,200 m, 22–28.iv.1960, L. W. Quate (BPBM); 1♂, Nha Trang, 17–26.xi.1960, C. M. Yoshimoto (BPBM); 1♂, 1♀, 22 km S of Nha Trang, 20–26.xi.1960, C. M. Yoshimoto (BPBM); 7♀, Chute de Bobla, 7 km W of Dilinh, 840 m, 27.iv.1960, R. E. Leech (BPBM); 3♂ 1♀, Dalat, 1,500 m, 29.iv.–4.v.1960, S. Quate and L. [W.] Quate (BPBM); 1♂, 18 km of Dalat, 1,500 m, 29.iv.–5.v.1960, S. Quate (BPBM); 2♀, Dai Lanh, N of Nha Trang, 30.xi–5.xii.1960, C. M. Yoshimoto (BPBM); 1♀, 17 km S of Dilinh, 1,300 m, 6–13.x.1960, C. M. Yoshimoto (BPBM); 1♀ 10 km E of Ban Me Thuot, 570 m, 9.v.1960, ex. fresh human excrement, R. E. Leech (BPBM); 1♀, Dalat, 6 km S, 1,400–1,500 m, 9.vi.–7.vii.1961, N. R. Spencer (BPBM); 1♀, 9 km S of Dilinh (Djiring), 24.iv.1960, R. E. Leech (BPBM). LAOS: 9♂ 10♀, Vientiane Prov., Ban Van Eue, 10–11.iv.1965, 15–31.v.1965, 31.vii.1965, 15.ii.1966, 25, 29.iii.1966, 15.iv.1966, 29.iv.1966, 31.v.1966, 15.xii.1966, 30.iii.1967, 30.ix.1967, 31.xii.1968, J. L. Gressitt, native collector (BPBM); 1♀, Ban Theuong, 18 km NW of Xieng Khouang, 1,035 m, 2–6.viii.1960, R. E. Leech (BPBM); 1♂, Vientiane Prov., Vientiane, 25.iii.1966, J. Sedlacek and M. Sedlacek (BPBM); 1♂, Vientiane Prov., Gi Sion Vill., De Tha Ngone, 26.xii.1965, native collector (BPBM); 5♂ 2♀, Muong Sing, NW of Luang Prabang, 650 m, 6–10.vi.1960, S. Quate and L. [W.] Quate (BPBM); 1♀, Phou-kow-kuei, 16.iv.1965, J. L. Gressitt (BPBM).

Bionomics. The adults are commonly found in woods and forests and are attracted to decaying animal matter such as dead earthworms, land snails, and snakes.

Distribution. Japan, Taiwan, China, Thailand, Vietnam, Laos, Malaysia (as Malaya and Borneo), Indonesia, Sri Lanka, India, Philippines, Papua New Guinea, and Australia.

Lucilia porphyrina (Walker, 1857)

Musca porphyrina Walker, 1857: 24. Type locality: Mount Ophir, Malaya [Malaysia].
Lucilia porphyrina: Thinh 1988: 15 (Vietnam).

Length. 5.0–11.0 mm.

Specimens examined. VIETNAM: 1♀, M'Drak, E of Ban Me Thout, 4[00]–600 m, 8–19.xii.1960, C. M. Yoshimoto (BPBM); 1♂ 2♀, Fyan, 900–1,000 m,

1,200 m, 11.vii.–9.viii.1961, N. R. Spencer (BPBM); 1♂ 2♀, Dilinh, 1,200 m, 22–28.iv.1960, L. W. Quate (BPBM); 2♂ 1♀, Dalat, 1,500 m, 29.iv.–4.v.1960, 1,550 m, 11.ix.1960, J. L. Gressitt, S. Quate and L. [W.] Quate (BPBM); 2♀, Blao [Balao], 500 m, 14–21.x.1960, C. M. Yoshimoto (BPBM); 1♂ 1♀, Ap Hung-Lam, 21 km NW of Dilinh, 1,100 m, 29.ix–5.x.1960, C. M. Yoshimoto (BPBM); 1♂ 2♀, 6 km S of Dalat, 1,400–1,500 m, 1,550 m, 11–12.ix.1960, 9.vi.–7.vii.1961, J. L. Gressitt and N. A. Spencer (BPBM); 3♂ 2♀, Chute de Bobla, 7 km W of Dilinh, 840 m, 27.iv.1960, R. E. Luch (BPBM); 1♂, 20 km S of Dalat, 1,300 m, 12.ix.1960, J. L. Gressitt (BPBM); 2♂, Dak Song, 76 km SW of Ban Me Thout, 870 m, 19–21.v.1960, L. W. Quate (BPBM); 1♂, 17 km S of Dilinh, 1,300 m, 6–13.x.1960, C. M. Yoshimoto (BPBM). LAOS: 1♂, Vientiane Prov., Ban Van Eue, 15.viii.1966, native collector (BPBM).

Bionomics. Adults are attracted to decaying animal matter. Larvae are also scavengers. Primarily forest inhabitants.

Distribution. Widely distributed in the Indo-Australian region including India, Sri Lanka, Nepal, Thailand, Vietnam, *Laos, Malaysia (as Malaya and Borneo), Indonesia (Sumatra, Java), Philippines, Japan, Korea, Taiwan, China, Papua New Guinea (New Guinea, Manus I., Mussau I., New Britain, New Ireland), and Australia (Queensland).

Lucilia sericata (Meigen, 1826)

Musca sericata Meigen, 1826: 53. Type locality: "Oesterreich".
Lucilia sericata: Thinh 1988: 15 (Vietnam).

Length. 6.5 mm.

Specimen examined. VIETNAM: 1♂, Saigon, 18.ix.1961, G. Imadate (TMDU).

Bionomics. A very serious pest in Africa and Australia because of the habit of blowing sheep; however nothing is known from Indochina.

Distribution. Vietnam (as Saigon). Widely distributed in the temperate regions of the world.

Genus *Hemipyrellia*

Hemipyrellia Townsend, 1918: 154. Type species: *Hemipyrellia curriei* Townsend, 1918, by original designation (=*Lucilia fernandica* Macquart, 1855).

Key to the species of *Hemipyrellia*

1. Third antennal segment entirely orange-yellow; abdomen metallic purplish-blue or greenish-blue, heavily white-dusted ..... *H. pulchra*
– Third antennal segment entirely or largely dark brown to fuscous; abdomen metallic green to cupreous green, thinly white-dusted 2
2. Thoracic squama brownish white; facial tomentum greyish; eyes subholoptic in ♂, dichoptic in ♀; hairs on ventral surface of male abdomen shorter than arista ..... *H. ligurriens*
– Thoracic squama pure white; eyes holoptic in ♂, dichoptic in ♀; male abdomen densely covered on ventral surface with hairs nearly as long as arista. No

record from Indochina.....*H. tagaliana* (Bigot, 1887)

Hemipyrellia ligurriens (Wiedemann, 1830)

Musca ligurriens Wiedemann, 1830: 655. Type locality: Java [Indonesia] and China.
Hemipyrellia ligurriens: Thinh 1988: 15 (Vietnam).

Length. 6.5–9.0 mm.

Specimens examined. VIETNAM: 1♂, Kontum, 570 m, *ex.* human excrement, 13–14.vi.1960, R. E. Leech (BPBM); 1♂, M'Drak, E of Ban Me Thuot, 4[00]–600 m, 8–19.xii.1960, S. [Quate] and L. [W.] Quate (BPBM). LAOS: 3♀, Vientiane Prov., Ban Van Eue, ?.x.1965, 15.iii.1966, 15.xii.1966, native collector (BPBM); 1♂, Vientiane Prov., Tha Ngone, 23.ix.1965, native collector (BPBM); 1♂, Nongtevada, 4.xi.1965, native collector (BPBM); 3♂ 3♀, Muong Sing, NW of Luang Prabang, 650 m, 6–10.vi.1960, L. W. Quate (BPBM); 1♂ 1♀, Borikhane Prov., Paksane, 31.viii.1965, native collector (BPBM).

Bionomics. Reported by Patton (1922; as *L. ballardi* Patton, 1922) to feed on human excreta at adult stage and to oviposit in decaying animal matter only.

Distribution. Japan, Korea, China, Taiwan, Philippines, Vietnam, *Laos, Thailand, Malaysia (as Malaya and Borneo), Singapore, Indonesia (Sumatra, Java, Sulawesi, Ambon), Papua New Guinea (New Guinea, Bismarck Arch., Bougainville I.), Australia (Queensland), India, and Sri Lanka.

****Hemipyrellia pulchra*** (Wiedemann, 1830)

Musca pulchra Wiedemann, 1830: 406. Type locality: not given.

Length. 6.5–9.0 mm.

Specimens examined. VIETNAM: 1♀, Nha Ho, 14 km N of Phan Rang, 18.xi.1960, C. M. Yoshimoto (BPBM). LAOS: 1♀, Wapikhamthong Prov., Wapi, 31.v.1967, native collector (BPBM); 2♀, Vientiane Prov., Gi Sion Vill., De Tha Ngone, 10–24.x.1965, native collector (BPBM).

Bionomics. Larvae breed in human excrement or decomposing carcasses of both animals and birds. Adults feed in flowers and on fruit juice.

Distribution. *Vietnam, *Laos, Thailand, and India.

Genus ***Hypopygiopsis***

Hypopygiopsis Townsend, 1916: 300. Type species: *Hypopygiopsis splendens* Townsend, 1916, by original designation (=*Musca fumipennis* Walker, 1856).

Key to the species of *Hypopygiopsis*

1. Anterior part of frontal stripe reddish brown to black; parafrontalia and

parafacialia covered with grey tomentum; antennae and palpi fuscous to brown .....*H. infumata*

– Anterior part of frontal stripe orange; parafrontalia parafacialia and jowls covered with yellow tomentum; antennae and palpi orange .....*H. tumrasvini*

Hypopygiopsis infumata (Bigot, 1877)

Somomyia infumata Bigot, 1877: 42. Type locality: Burma [Myanmar].
Hypopygiopsis infumata: Kurahashi 1977: 559 (Vietnam, Laos, Cambodia); Xue and Chao 1996: 1438 (Vietnam, Laos, Cambodia); Fan 1997: 253 (Vietnam, Laos).
Hypopygiopsis violacea: Séguy 1946: 81 (Vietnam, Laos); Thinh 1988: 15 (Vietnam). [Misidentified]

Length. 10.0–17.0 mm.

Specimen examined. LAOS: 1♀, Wapikhamthong Prov., Wapi, 15.v.1967, native collector (BPBM).

Bionomics. Adults are found in dense native forest. Oviparous.

Distribution. India, China (southern part), Vietnam, Laos, Cambodia, and Thailand.

Hypopygiopsis tumrasvini Kurahashi, 1977

Hypopygiopsis tumrasvini Kurahashi, 1977: 556. Type locality: near Sai Yok, Kanchana Buri, Thailand.
Hypopygiopsis fortis: Thinh 1988: 15 (Vietnam). [Misidentified]
Hypopygiopsis tumrasvin: Xue and Chao 1996: 1438 (Cambodia).

Length. 11.0–14.0 mm.

Specimens examined. VIETNAM: 1♀, Blao (Balao), 500 m, 14–21.x.1960, C. M. Yoshimoto (BPBM). LAOS: 1♂, Vientiane Prov., Ban Van Eue, 30.iii.1966, native collector (BPBM).

Bionomics. Adults are found only in dense tropical forests. Oviparous.

Distribution. China (Yunnan, Hainan I.), Vietnam, *Laos, Cambodia, Thailand, and India.

Tribe **Polleniini**
Genus ***Dexopollenia***

Dexopollenia Townsend, 1917: 201. Type species: *Dexopollenia testacea* Townsend, 1917, by original designation.

Key to the species of *Dexopollenia*

1. Body entirely testaceous; mesothoracic spiracle yellow; *ac* 1+2 in both sexes .....*D. yupae*
– Body generally black; mesothoracic spiracle blackish; *ac* 0–1+1–2 2

2. Third antennal segment blackish; femora usually blackish; abdomen largely or entirely blackish except for tergite 1+2 reddish orange in ♀.....*D. fangensis*
– Third antennal segment reddish brown; femora reddish brown; abdomen yellowish orange or testaceous, with marginal band on tergites in ♀..... .....*D. geniculata*

**Dexopollenia fangensis* Kurahashi, 1995

Dexopollenia fangensis Kurahashi, 1995: 141. Type locality: Doi Huai Hwer, Fang, Thailand.

Length. 6.0–6.5 mm.

Specimens examined. VIETNAM: 6♂, Dalat, 1,550 m, 11.ix.1960, J. L. Gressitt (BPBM); 2♀, 6 km S of Dalat, 1,550 m, 12.ix.1960, J. L. Gressitt (BPBM); 1♂, 17 km S of Dilinh, 1,300 m, 6–13.x.1960, C. M. Yoshimoto (BPBM).

Bionomics. Nothing is known.

Distribution. Thailand and *Vietnam.

**Dexopollenia geniculata* Malloch, 1935

Dexopollenia geniculata Malloch, 1935: 671. Type locality: Mt. Omei, Szechuen Prov., China.

Length. 6.0–6.8 mm.

Specimens examined. LAOS: 8♀, Vientiane Prov., Ban Van Eue, 15.xii.1965, 29.iii.1966, 31.xii.1968, native collector (BPBM).

Bionomics. Nothing is known.

Distribution. China (Sichuan, Yunnan) and *Laos.

**Dexopollenia yuphae* Kurahashi, 1995

Dexopollenia yuphae Kurahashi, 1995: 140. Type locality: near Sai Yok, Kanchana Buri, Thailand.

Length. 5.5–8.5 mm.

Specimens examined. VIETNAM: 1♂ 3♀, Blao (Balao), 500 m, 14–21.x.1960, C. M. Yoshimoto (BPBM); 1♂, Dalat, 1,500 m, 26–27.ix.1960, C. M. Yoshimoto (BPBM); 1♂, 17 km S of Dilinh, 1,300 m, 6–13.X.1960, C. M. Yoshimoto (BPBM). LAOS: 3♂ 6♀, Vientiane Prov., Ban Van Eue, 31.vii.1965, 31.v.1966, 30.vi.1966, 31.i.1967, native collector (BPBM).

Bionomics. Nothing is known.

Distribution. Thailand, *Laos, and *Vietnam.

Tribe **Bengaliini**
Genus ***Bengalia***

Bengalia Robineau-Desvoidy, 1830: 425. Type species: *Bengalia labiata* Robineau-Desvoidy, 1830, designated by Townsend (1916: 6).

Key to the species of *Bengalia*

1. Pre-alar knob gourd-shaped; abdominal sternite 4 in ♂ with pair of long, strong, black bristles ..... *B. labiata*
– Pre-alar knob rounded; abdominal sternite 4 in ♂ without pair of long, strong, black bristles 2
2. Tergite 5 without pair of discal bristles 3
– Tergite 5 with pair of strong discal bristles 6
3. Clypeus strongly projecting; vibrissae inserted far above mouth margin; tergites 1+2–3 without bristles on either side; posterior margin of eye concave in profile ..... *B. torosa*
– Clypeus less strongly projecting; vibrissae inserted near level of mouth margin; tergites 1+2–3 with bristles on each side; posterior margin of eye straight in profile 4
4. Thoracic dorsum testaceous; marginal band on each tergite narrow; mesopleuron reddish orange with black spot on upper half ..... *B. xanthopyga*
– Thoracic dorsum black; marginal band on tergites 3–4 broad; mesopleuron wholly or largely fuscous 5
5. Tergite 5 wholly black ..... *B. escheri*
– Tergite 5 testaceous, darkened ventrally ..... *B. chiangmaiensis*
6. Pteropleuron mostly clothed with black hairs, at least 20 hairs on upper part black; mid tibia fringed on posteroventral surface in ♂ 7
– Pteropleuron mostly clothed with yellow hairs, less than 10 black hairs present on upper part; mid tibia not fringed in ♂ 8
7. Sternite 5 in ♂ with bifid projection (cf. Kurahashi 1994, fig. 8a); mid tibia not fringed in ♂; tergite 5 in ♀ with small indentation ..... *B. varicolor*
– Sternite 5 in ♂ with round, lobulate projection indented only slightly in median part of posterior margin (cf. Kurahashi 1994, fig. 8b); tergite 5 in ♀ without indentation ..... *B. emarginata*
8. Hind tibia in ♂ fringed posteroventrally and anteroventrally, with 1 strong *av* apically; sternite 4 broad and sternite 5 oval in ♀ ..... *B. bezzii*
– Hind tibia in ♂ without fringe, with 2–3 strong *av* on apical half; sternites 4 and 5 elongate-oval in ♀ ..... *B. surcoufi*

Bengalia bezzii Senior-White, 1923

Bengalia bezzii Senior-White, 1923: 306. Type locality: Sundunganga, Ceylon [Sri Lanka].

Bengalia latro: Séguy 1946: 83 (Vietnam, Laos); Thinh 1988: 15 (Vietnam); Xue and Chao 1996: 1380 (Vietnam, Laos).

Bengalia bezzii: Fan 1997: 449 (Vietnam).

Length. 8.0–16.0 mm.

Specimens examined. VIETNAM: 1♂, Dak Song, 76 km SW of Ban Me Thout, 870 m, 19–21.v.1960, S. Quate (BPBM); 6♂, Mt. Lang Bian, 1,500–2,000 m, 19.v–8.vi.1961, N. R. Spencer (BPBM).

Bionomics. Adults prey on ant pupae when ants carry them on the march.

Distribution. Japan (Ishigaki-Jima I.), Taiwan, China, Philippines, Vietnam, Laos, Thailand, Malaysia (as Malaya), Singapore, Indonesia (Java), India, and Sri Lanka.

**Bengalia chiangmaiensis* Kurahashi and Tumrasvin, 1979

Bengalia chiangmaiensis Kurahashi and Tumrasvin, 1979: 297. Type locality: Chiangdao, N. W. Chiangmai Prov., Thailand.

Length. 12.5–15.0 mm.

Specimens examined. LAOS: 2♂, Vientiane Prov., Ban Van Eue, 750 m, forest streambed, 10–11.iv.1965, 15.v.1966, J. L. Gressitt and native collector (BPBM).

Distribution. *Laos and Thailand.

Bengalia emarginata Malloch, 1927

Bengalia emarginata Malloch, 1927: 412. Type locality: Singapore.
Bengalia emarginata: Thinh 1988: 15 (Vietnam).

Length. 14.0–14.5 mm.

Specimens examined. VIETNAM: 1♂, Kontum, 570 m, 13–14.vi.1960, R. E. Leech (BPBM). LAOS: 1♂ 1♀, Vientiane Prov., Ban Van Eue, 750 m, forest steambed, 10–11.iv.1965, 15.iii.1966, J. L. Gressitt and native collector (BPBM); 2♀, Vientiane Prov., Ban Na Pheng, 19.v.1968, native collector (BPBM).

Bionomics. Nothing is known.

Distribution. Taiwan, China (Fujian, Guanxi, Hainan I.), Vietnam, *Laos, Thailand, and Singapore.

Bengalia escheri Bezzi, 1913

Bengalia escheri Bezzi, 1913: 76. Type locality: Formosa [Taiwan].
Bengalia escheri: Thinh 1988: 15 (Vietnam).

Specimens examined. No available material in our collection.

Bionomics. Nothing is known.

Distribution. Taiwan, China, Vietnam, Malaysia (as Malaya), Nepal, and India.

**Bengalia labiata* Robineau-Desvoidy, 1830

Bengalia labiata Robineau-Desvoidy, 1830: 426. Type locality: Tranquebar, India.

Length. 7.0–10.0 mm.

Specimens examined. VIETNAM: 1♂, Dai Lanh, N of Nha Trang, 30.xi.–5.xii.1960, C. M. Yoshimoto (BPBM). LAOS: 1♂, Muong Sing, NW of Luang Prabang, 650 m, 6–10.vi.1960, L. W. Quate (BPBM); 1♂, Vientiane Prov., Ban Van Eue, 15.x. 1967, native collector (BPBM).

Bionomics. Nothing is known.

Distribution. China (Yunnan, Hainan I.), *Vietnam, *Laos, Thailand, Malaysia (as Malaya and Borneo), Indonesia (Sumatra), and Bangladesh.

**Bengalia surcoufi* Senior-White, 1923

Bengalia surcoufi Senior-White, 1923: 306. Type locality: Mungpoo, Darjeeling District, India.

Length. 9.0 mm.

Specimen examined. VIETNAM: 1♂, Fyan, 1,200 m, 11.vii.–9.viii.1961, N. R. Spencer (BPBM).

Bionomics. Nothing is known.

Distribution. *Vietnam, Nepal, and India.

Bengalia torosa (Wiedemann, 1819)

Musca torosa Wiedemann, 1819: 21. Type locality: Bengal [probably Bangladesh].
Bengalia jejuna: Senior-White *et al.* 1940: 88. [Misidentified]
Bengalia lateralis: Séguy 1946: 83 (Laos); Thinh 1988: 15 (Vietnam).
Bengalia torosa: Fan 1997: 474 (Laos).

Length. 8.0–10.5 mm.

Specimens examined. VIETNAM: 1♀, Fyan, 900–1,000 m, 11.vii.–9.viii.1961, N. R. Spencer (BPBM); 1♀, Chute de Bourg, 37 km SE of Dalat, 780 m, 25.iv.1960, R. R. Leech (BPBM). LAOS: 3♀, Vientiane Prov., Ban Van Eue, 31.vii.1965, 30.vi.1966, 30.ix.1967, native collector (BPBM); 5♂ 4♀, Vientiane Prov., Ban Na Pheng, 19.v.1968, native collector (BPBM); 1♂, Wapikhamthong Prov., Wapi, 31.v.1967, native collector (BPBM).

Bionomics. Oviparous. Life-history is unknown.

Distribution. Taiwan, Philippines, China (Yunnan, Hainan I.), Vietnam, Laos, Thailand, Indonesia, India, and Sri Lanka.

Bengalia varicolor (Fabricius, 1805)

Musca varicolor Fabricius, 1805: 296. Type locality: Tranquebar, India.

Bengalia varicolor: Xue and Chao 1996: 1381 (Laos); Kurahashi *et al.* 1997: 43 (Vietnam, Laos); Fan 1997: 451 (Vietnam, Laos).

Length. 12.0–13.0 mm.

Specimens examined. VIETNAM: 3♂, 6 km S of Dalat, 1,400–1,500 m, 9.vi.–7.vii.1961, N. R. Spencer (BPBM); 1♂, 6 km SW of Dalat, 1,550 m, 11.ix.1960, J. L. Gressitt (BPBM).

Bionomics. It is recorded that this species seizes insects that have been taken as prey by ants (De Meijere 1910).

Distribution. Taiwan, China (Sichuan, Zhejiang, Jangxi, Guangdong, Yunnan, Hainan I.), Vietnam, Laos, Thailand, Malaysia (as Malaya), Indonesia (Java), and India (Madras).

Bengalia xanthopyga Senior-White, 1924

Bengalia xanthopyga Senior-White, 1924: 107. Type locality: Singapore.
Bengalia asymmetria Kurahashi and Tumrasvin, 1979: 297. Type locality: N. W. Chiangmai, Fang, Thailand. **Syn. nov**.

An asymmetrical projection of male sternite 5 was considered characteristic of *B. asymmetria*, but the examination of materials from different localities revealed that the holotype and paratypes of *B. asymmetria* are a local form of *B. xanthopyga*.

Length. 13.0–15.0 mm.

Specimens examined. LAOS: 3♂ 3♀, Vientiane Prov., Ban Van Eue, 750–800 m, forest streambed, 10–11.iv.1965, 15–31.v.1965, 20.vi.1966, 30.vi.1967, J. L. Gressitt and native collector (BPBM); 1♂, Vientiane Prov., Ban Na Pheng, 19.v.1968, native collector (BPBM).

Bionomics. Nothing is known.

Distribution. Philippines (Luzon), *Laos, Thailand, Malaysia (as Malaya), Singapore, Indonesia (Java), and India.

Genus ***Verticia***

Verticia Malloch, 1927: 388. Type species: *Verticia orientalis* Malloch, 1927, by original designation.

Key to the species of *Verticia*

1. Tergites 3–5 with broad, fuscous, marginal band broader than 1/3 of tergite length; frontal stripe with black, minute setulae medially.....*V. quatei* sp. nov.
– Tergites 3–5 with narrow, fuscous, marginal band narrower than 1/3 of tergite length; frontal stripe without black setulae medially.....2
2. Fore tibia with 1–2 *ad* in ♂; mid tibia without *ad* in ♂, with 1 *ad* in ♀..... .....*V. indochinica* sp. nov.
– Fore tibia with 3 *ad* in ♂; mid tibia with 1 *ad* in ♂, 2–3 *ad* in ♀.....*V. fasciventris*

**Verticia fasciventris* Malloch, 1927
(Fig. 3d)

Verticia fasciventris Malloch, 1927: 391. Type locality: Lubok, Kedongong, Mount Ophir, Malaya [Malaysia].

Length. 4.0–4.5 mm.

Specimens examined. VIETNAM: 1♂, DiL[l]inh (Djiring), 700 m, 22–28.iv.1960, L. W. Quate (BPBM); 1♂, Ap Hung-Lam, 21 km NW of Dilinh, 1,100 m, 29.ix.–5.x. 1960, C. M. Yoshimoto (BPBM).

Bionomics. Nothing is known.

Distribution. *Vietnam, Thailand, and Malaysia (as Malaya).

Verticia indochinica sp. nov.
(Figs 1, 3c)

Description. *Male.* Head: dichoptic; eyes bare; frons index 0.33–0.35 (n=7); frontal stripe yellowish brown, darkened posteriorly, broad, parallel-sided, 9.0× as wide as one of parafrontalia as measured just in front of anterior ocellus; parafrontalia yellowish brown, slightly darkened posteriorly, slightly brownish-grey dusted, with sparse, black setulae, and with about 5 strong *ori*; *ors* 1+1, strong; *oc* developed; *acco* absent; *poc* weakly developed, divergent; *ov* and *iv* strongly developed; *pooc* divergent; *occ* absent; parafacialia narrower than width of 3rd antennal segment, yellowish, slightly yellowish-brown dusted, with minute, black setulae along entire length, and with setulose hairs in single row on lower half; facialia yellowish, slightly yellowish-dusted, lacking median carina; medianae narrow, yellowish orange, bare; vibrissarium and gena yellowish orange, yellowish-dusted, clothed with black hairs; vibrissa very strong; postgena and occiput concolorous with gena, with broad median and narrow lateral stripes behind vertex; occiput largely bare on central part; postgena with 1 rather strong bristle on posterior inner edge; 1st and 2nd antennal segments yellowish orange, with black setulae, and with 1 bristle only on 2nd segment; 3rd antennal segment yellowish orange on both outer and inner surfaces, slightly more than 4.5× as long as 2nd; arista brown, long-plumose on dorsal surface, short-plumose on ventral surface; palpi yellow, with black setulae.

Thorax: entirely yellowish brown, with narrow, fuscous brown stripe along line of *dc*, very slightly brownish-grey dusted on dorsum, clothed with black hairs; humerus and postalar callus yellowish brown, humerus clothed with black setulae except for some yellow ones on lower part near propleuron; propleuron bare; prosternum with few brown hairs on anterolateral margin, virtually bare; supraspiracular convexity bare; mesothoracic and metathoracic spiracles yellow; pleurotergite with several black setulae below thoracic squama; postalar declivity bare in central circle; no tympanic and anterior parasquamal tufts of hairs. Chaetotaxy: *ac* 2–3+2–3; *dc* 2+4; *ia* 1+2; *sa* 3; *prs* 1; *pa* 1–2; *h* 2–3; *ph* 2; *n* 2; *st* 1+1; *pp* 1; *pst* 1–2; *sc* 4+1; no additional bristle developed between rows of postsutural *ia* and *sa*.

Wings: yellowish brown; veins yellowish brown to brown; epaulet brown; basi-

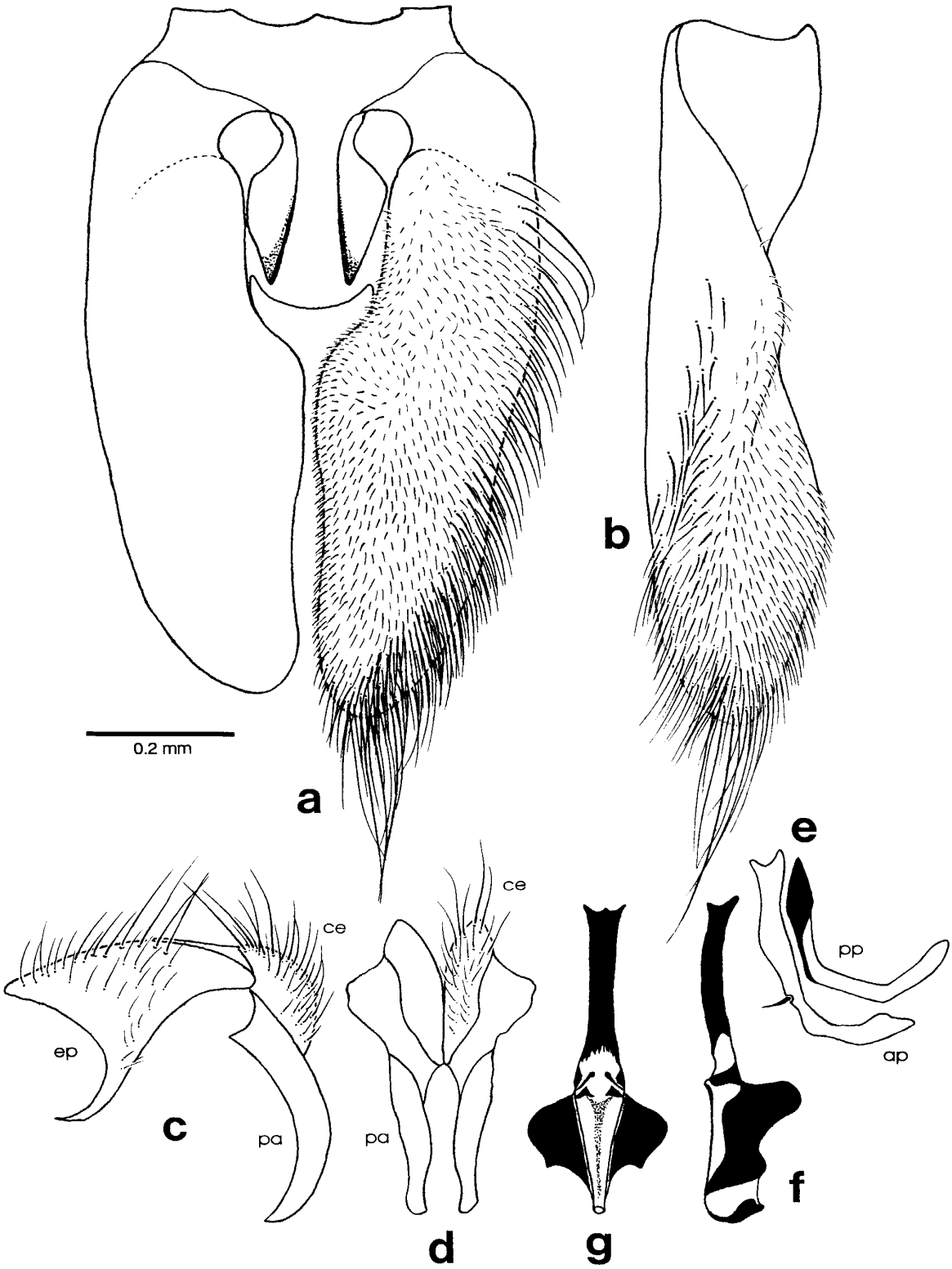

Fig. 1. *Verticia indochinica* sp. nov., ♂: a, sternite 5, ventral view; b, sternite 5, lateral view; c, epandrium (ep), paralobus (pa), and cercus (ce), lateral view; d, cerci and paralobi, caudal view; e, anterior (ap) and posterior (pp) parameres, lateral view; f, aedeagus, lateral view; g, aedeagus, posterior view.

costa yellowish brown; subcostal sclerite yellowish brown, silver-pubescent; node of 2nd and 3rd longitudinal veins with few black setulae below; 3rd longitudinal vein setulose above from base to 1/10 of length of section from r–m to wing edge; 4th longitudinal vein bent with obtuse angle, with section from bend to wing edge very slightly inflexed and almost straight; thoracic and alar squamae yellowish brown, and only thoracic one tongue-shaped, bare on upper surface. Halteres yellowish orange.

Legs: yellowish brown, slightly darkened on tarsi, more or less silvery-grey dusted on coxae and femora, with black hairs, also with some fine yellow hairs at base of anterior surface of fore coxa; fore tibia with 2 *ad* and 1 *p*; mid tibia with 1 short *pd*, without *ad* and *v*; hind tibia with 2–3 *ad*, 1 *pd*, and 2–3 *av*.

Abdomen: yellowish brown, with narrow marginal band on tergites 1+2 and 3–4; marginal band on tergite 4 broader than those on proceeding two, sometimes obliterated medially; tergite 5 with broad marginal band obliterated medially; tergite 1+2 with row of fine, decumbent, marginal bristles, and with several longer ones on lateral sides; tergites 3–5 with row of fine, decumbent, marginal bristles; sternites with black hairs except for some yellow hairs on sternite 1 and anterior part of sternite 2; sternite 5 with elongate lateral lobe clothed with fine hairs apically. Hypopygium rather prominent, reddish. Male genitalia shown in Fig. 1.

Female. Head: similar to that of male in general appearance, dichoptic; eyes separated at vertex by distance equal to 0.36–0.38 (n=5) of head width; parafacialia with more than 2 irregular rows of black setulae on lower half; *pooc* divergent; 3rd antennal segment slightly darkened entirely. Legs: mid tibia with 1 strong *v*. Abdomen: tergite 1+2 with or without narrow marginal band; marginal band on tergites 3–4 narrower than that of male, sometimes indistinct; marginal band on tergite 5 also narrow, narrower than half length of tergite 5. Ovipositor short.

Body length: 4.5–5.3 mm.

Type series. Holotype: ♂, M'Drak, E of Ban Me Thout, 400–600 m, Vietnam, 8–19.xii.1960, C. M. Yoshimoto (BPBM). Paratypes: 7♂ 5♀, same data as holotype (BPBM). Holotype and some paratypes (1♂ 1♀) are deposited in Bishop Museum, Honolulu (BPBM), and other paratypes (1♂ 1♀) in Reference Museum, Department of Medical Entomology, National Institute of Infectious Diseases, Tokyo (NIID).

Etymology. The specific name is derived from the area of Indochina.

Remarks. This species is similar to *V. fasciventris* Malloch, 1927 previously recorded from Thailand and Malaysia in general appearance, but can be easily distinguished by the criteria given in the key and the evidence of male genitalia. This new species is also allied to *V. chani* Kurahashi, Benjaphong and Omar, 1997 from Sabah, Malaysia, but is easily separated by the presence of yellowish hairs on prosternum and two black longitudinal stripes on testaceous yellow thoracic dorsum.

Bionomics. Unknown.

Distribution. Vietnam.

****Verticia quatei*** sp. nov.

(Figs 2, 3a, b)

Description. *Male*. Head: dichoptic; eyes bare; frons index 0.34 (n=4); frontal

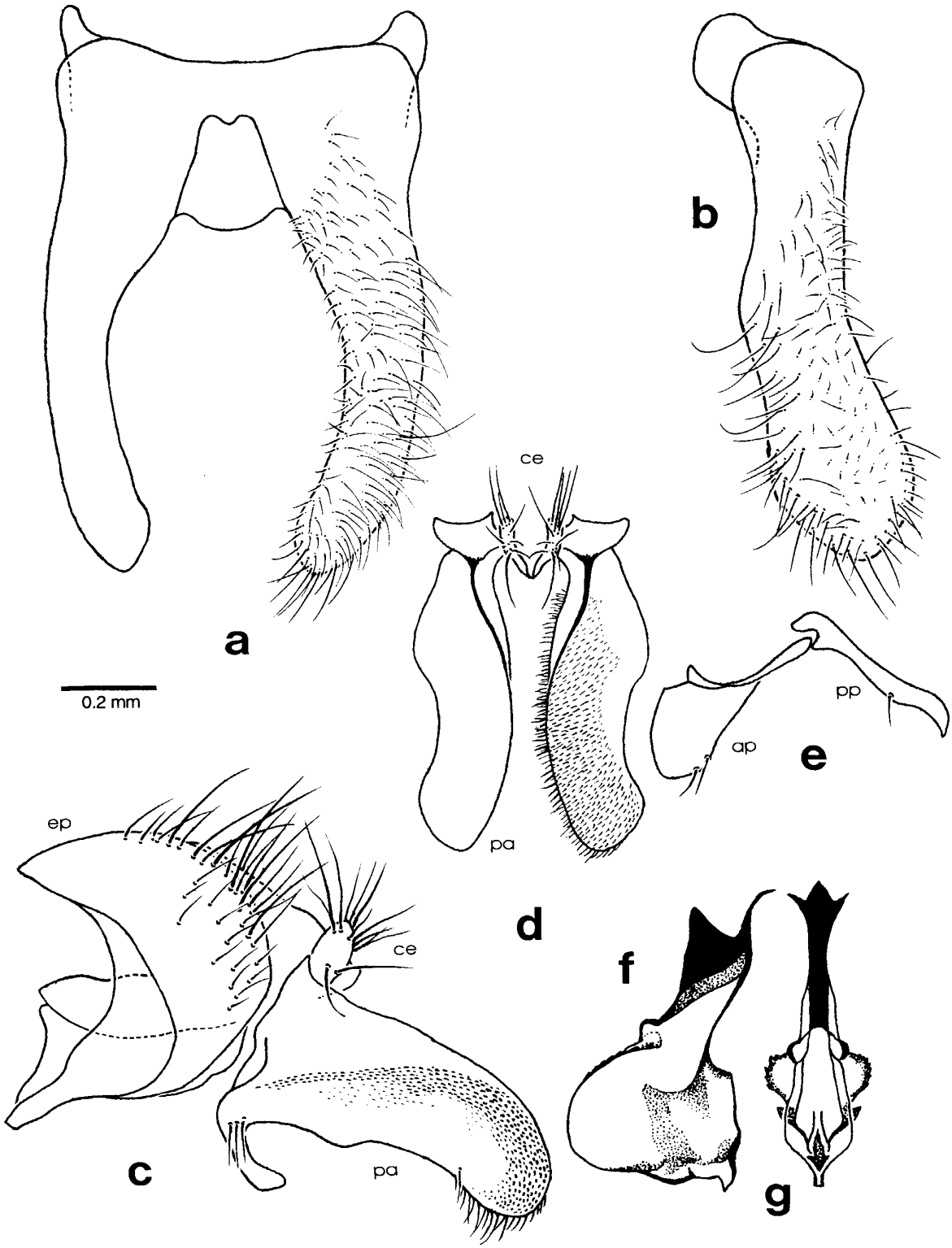

Fig. 2. *Verticia quatei* sp. nov., ♂: a, sternite 5, ventral view; b, sternite 5, lateral view; c, epandrium (ep), paralobus (pa), and cercus (ce), lateral view; d, cerci and paralobi, caudal view; e, anterior (ap) and posterior (pp) parameres, lateral view; f, aedeagus, lateral view; g, aedeagus, posterior view.

stripe brown, broad, parallel-sided, 4.0× as wide as one of parafrontalia as measured just in front of anterior ocellus; parafrontalia brown, slightly brownish-grey dusted, with black setulae, and with about 8 strong *ori*; *ors* 1+1, strong; *oc* developed; *acco* absent; *poc* strong, divergent; *ov* and *iv* strongly developed; *occ* absent; parafacialia narrower than width of 3rd antennal segment, yellowish brown, slightly brown-dusted, with black setulae along entire length, and with setulose hairs in single row on lower half; facialia yellowish orange, slightly yellowish-grey dusted, setulose on lower half; epistome not projecting forward, pale yellow; face yellowish brown, slightly yellowish-grey dusted, lacking median carina; mediana narrow, yellowish orange, bare; vibrissaria and gena yellowish orange, yellowish-grey dusted, clothed with black hairs; vibrissa very strong; postgena and lower half of occiput concolorous with gena; occiput largely bare on central part; postgena with 1 strong bristle on posterior inner edge; 1st and 2nd antennal segments reddish orange, with black setulae, and with 1 bristle only on 2nd segment; 3rd antennal segment largely fuscous brown on outer surface, reddish orange on inner surface and base of outer surface, slightly more than 4.5 × as long as 2nd; arista brown, long-plumose; palpi yellowish orange, with black setulae.

Thorax: entirely yellowish brown, slightly grey-dusted on dorsum, clothed with black hairs; humerus and postalar callus yellowish brown, with yellowish hairs only on anteriorly part of humerus; propleuron and prosternum bare; supraspiracular convexity bare; mesothoracic and metathoracic spiracles yellow; pleurotergite with several black setulae; postalar declivity bare in central circle; no tympanic and anterior parasquamal tufts of hairs. Chaetotaxy: *ac* 3+3; *dc* 3+4; *ia* 1+3; *sa* 3; *prs* 1; *pa* 1–3; h 3–4; *ph* 2; *n* 2; *st* 1+1; *pp* 1; *pst* 1–2; *sc* 4+0; 1–2 additional bristles developed between rows of postsutural *ia* and *sa*.

Wings: yellowish brown; veins yellowish brown to brown; epaulet and basicosta yellowish brown; subcostal sclerite yellowish brown, silver-pubescent; node of 2nd and 3rd longitudinal veins with few black setulae below; 3rd longitudinal vein setulose above from base to 1/3 length of section from r–m to wing edge; 4th longitudinal vein bent with obtuse angle, with section from bend to wing edge slightly inflexed before wing edge; thoracic and alar squamae yellowish brown, with upper surface of thoracic one bare. Halteres yellowish orange.

Legs: yellowish brown, more or less silver-grey dusted on coxae and femora, with black hairs, also with some fine, yellow hairs at base of anterior surface of fore coxa; fore tibia with 3 *ad* and no *p*; mid tibia with 1–2 *ad*, 2 *pd*, and no *v*; hind tibia with 3–4 *ad* and 3 *pd*.

Abdomen: yellowish brown, with narrow marginal band on tergite 1+2; tergites 3–4 with broad, dark marginal bands, broadest medially; tergite 5 with marginal band obliterated medially; tergite 1+2 with row of fine, decumbent, marginal bristles, and with several longer ones on lateral sides; tergites 3–5 with row of fine, decumbent, marginal bristles; sternites with black hairs; sternite 5 with elongate lateral lobe. Hypopygium rahter prominent, reddish. Male genitalia as shown in Fig. 2.

Female. Head: dichoptic, short, with constricted gena, showing characteristic shape of sexual dimorphism (cf. Senior-White *et al.* 1940, fig. 35); eyes separated at vertex by distance equal to 0.42 (n=2) of head width. Legs: fore tibia with 1 short *p* on apical third; mid tibia with 1 strong *v*; hind tibia with 1 strong *av*. Abdomen: tegite 1+2 with or without narrow marginal band; marginal bands on tergites 3–4

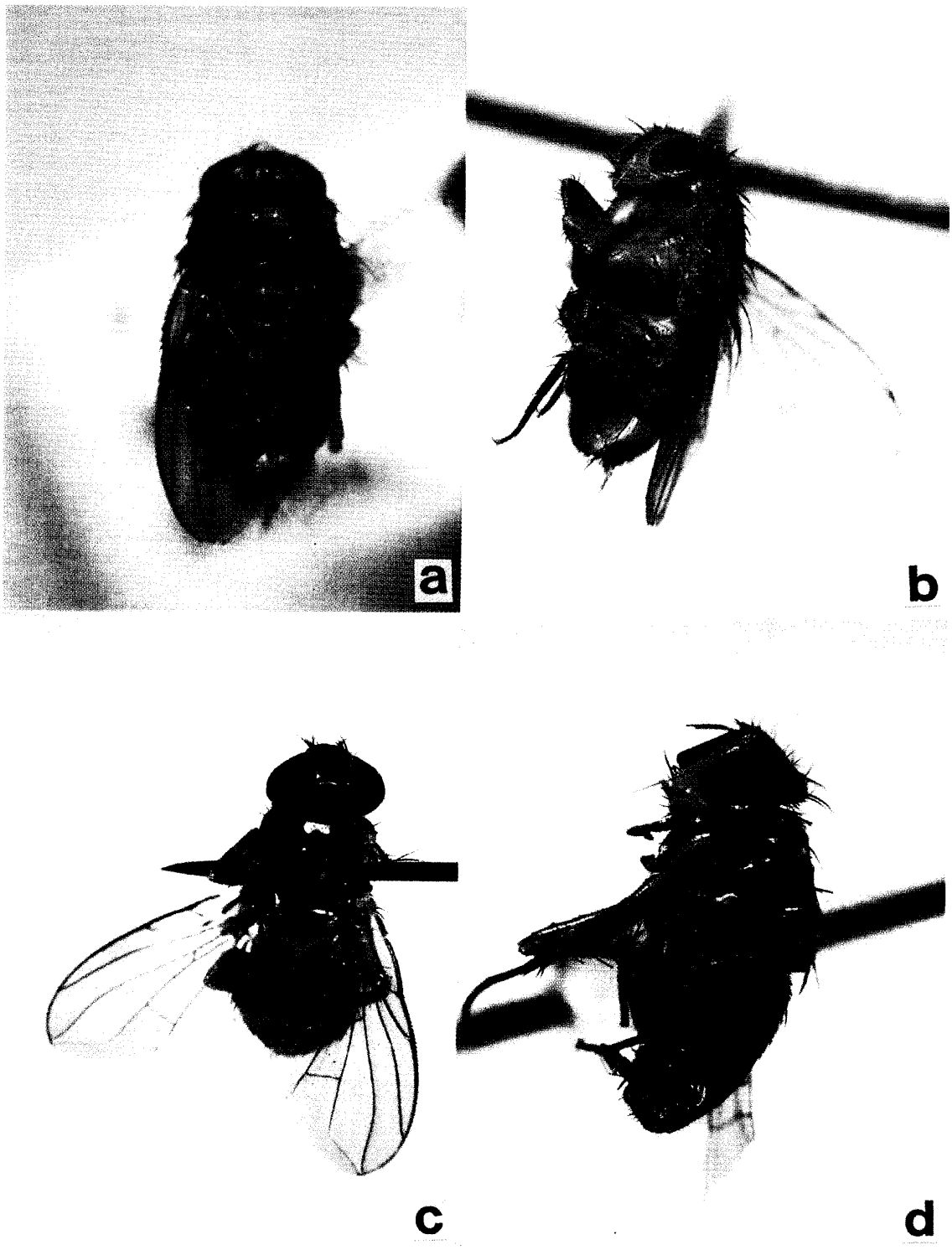

Fig. 3. a, *Verticia quatei* sp. nov., paratype ♀, dorsal view (body length 5.0 mm); b, *V. quatei* sp. nov., paratype ♀, lateral view (body length 5.0 mm); c, *V. indochinica* sp. nov., paratype ♂, dorsal view (body length 4.8 mm); d, *V. fasciventris* Malloch, 1927, ♂, lateral view (body length 5.5 mm).

more or less obliterated medially. Ovipositor short.

Body length: 4.5–6.0 mm.

Type series. Holotype: ♂, 20 km N of Dilinh (Djiring), Vietnam, 22–28.iv.1960, L. W. Quate (BPBM). Paratypes: VIETNAM: 1♂, 9 km S of Dilinh (Djiring), 24.iv.1960, R. E. Leech (BPBM); 1♂, Fyan, 1,200 m, 11.vii.–9.viii.1961, N. R. Spencer (BPBM); 1♀, 25 km SW of Pleiku, 400 m, 12.v.1960, L. W. Quate (BPBM)—LAOS: 1♂, Vientiane Prov., Ban Van Eue, 750 m, forest streambed, 10–11.iv.1965, J. L. Gressitt (BPBM); 1♀, Vientiane Prov., Phou Kou Khouei, 800 m, 12–13.iv.1965, J. L. Gressitt (BPBM). Holotype and some paratypes (2♂ 1♀) are deposited in Bishop Museum, Honolulu (BPBM) and other paratypes (1♂ 1♀) in Reference Museum, Department of Medical Entomology, National Institute of Infectious Diseases, Tokyo (NIID).

Etymology. The specific name is dedicated to the Bishop Museum collector, L. W. Quate, who collected the type material.

Remarks. This species is similar to *V. fasciventris* Maloch, 1927 from Thailand and Malaysia in general appearance, but can be distinguished by the criteria given in the key. This new species is also allied to *V. chani* Kurahashi, Benjaphong and Omar, 1927 from Sabah, Malaysia, but differs from it in the entirely testaceous yellow thorax and the evidence of male genitalia.

Bionomics. Nothing is known.

Distribution. Vietnam and Laos.

Subfamily **Chrysomyinae**
Tribe **Chrysomyini**
Genus ***Chrysomya***

Chrysomya Robineau-Desvoidy, 1830: 444. Type species: *Chrysomya regalis* Robineau-Desvoidy, 1830, designated by Coquillett (1910: 523).

Key to the species of *Chrysomya*

1. Mesothoracic spiracle white or yellowish 2
– Mesothoracic spiracle black to dark brown 3
2. Only one sternopleural bristle developed, *st* 0+1; tergite 5 with all hairs blackish; male head dichoptic; female frons metallic, with green tinge on upper parts; gena with large, glossy spot anteriorly; no *prs* ..... *C. nigripes*
– Two sternopleural bristles present, *st* 1+1; tergite 5 with pale yellow hairs laterally among black ones; male head holoptic; female frons darkened, but not metallic and lacking green tinge on upper part; gena entirely covered with silver-grey dusting; *prs* developed; prostigmatal bristle present ..... *C. rufifacies*
3. Femora swollen in ♂ and ♀, but more noticeably so in ♂; head dichoptic in both sexes; *ov* well developed in ♂; female tergite 5 with median cleft posteriorly; facial ridge well developed, high ..... *C. villeneuvi*
– Femora normal; head holoptic in ♂, dichoptic in ♀; *ov* absent in ♂; female tergite 5 without median cleft posteriorly; facial ridge normal 4
4. Alar and thoracic squamae both entirely fuscous black; gena and postgenal area fuscous 5
– At least base of alar squama white; gena and postgenal area orange-yellow 7
5. Body purple; length usually more than 11 mm; gena sometimes reddish,

clothed with golden hairs; no *ph*, except sometimes weakly developed in ♀; edge just below prealar bristle with patch of rather long black hairs, often extending onto suture (cf. Kurahashi *et al.* 1997, fig. 6a). No record from Indochina .....*C. thanomthini* Kurahashi and Tumrasvin, 1977

– Body blue to green, sometimes with purple tinge; length usually less than 11 mm; gena fuscous, with fuscous hairs; *ph* usually present; edge below prealar bristle with sparse hairs, bare on suture (cf. Kurahashi *et al.* 1997, fig. 6b) 6

6. Body bluish, sometimes with purple tinge; eye brown in live specimens; postgenal area covered with yellowish hairs; gena equal to about 3/10 in ♂, 4/10 in ♀ of total head height when viewed laterally; male cercus elongate, lobulate at apex [montane forest species] (cf. Kurahashi *et al.* 1997, fig. 7a) .....*C. pinguis*

– Body greenish; eye reddish violet in live specimens; postgenal area with black and brown hairs; gena equal to about 2/10 in ♂, 3/10 in ♀ of total head height when viewed laterally; male cercus stout [lowland forest species] (cf. Kurahashi *et al.* 1997, fig. 7b). No record from Indochina.....*C. defixa* (Walker, 1857)

7. Parafacialia and gena fuscous to black; setulae and hairs on parafacialia and facialia blackish; venter of tergite 5 with black hairs only; basal part of alar squama opaque-white, bare ventrally except for fringe.....*C. chani*

– Parafacialia and gena entirely orange; setulae and hairs on parafacialia and facialia yellowish; venter of tergite 5 intermixed with yellow hairs among black ones; opaque-white basal part of alar squama hairy ventrally.....8

8. Alar and thoracic squamae entirely white except for yellowih fringe; mesothoracic spiracle small, not longer than length of 3rd antennal segment; upper eye facets not conspicuously larger than lower in ♂; parafrontalia not obliterated in ♂; eyes separated each other by slightly less than width of 3rd antennal segment in ♂ [myiasis-producing species rarely seen except by rearing from host] .....*C. bezziana*

– Thoracic squama largely infuscated; mesothoracic spiracle large, much longer and broader than 3rd antennal segment in profile; male with upper eye facets conspicuously enlarged and with sharp transition to small facets in lower 1/3; parafrontalia almost obliterated in ♂; eyes above virtually touching in ♂ [common synanthropic species] .....*C. megacephala*

Chrysomya bezziana Villeneuve, 1914

Chrysomya bezziana Villeneuve, 1914: 430. Type locality: "Africa".
Chrysomya bezziana: Fan 1965: 206 (Vietnam); Thinh 1988: 16 (Vietnam); Fan 1997: 501 (Vietnam).

Specimens examined. No available material in our collection.

Bionomics. Well known species as a myiasis producer. Adults, however, are very rarely taken except when bred from actual cases of myiasis.

Distribution. Vietnam. Widely distributed through the Afrotropical and Oriental regions, including the island of New Guinea and the Bismarck Archipelago.

**Chrysomya chani* Kurahashi, 1979

Chrysomya chani Kurahashi, 1979: 288. Type locality: Bukit Timah Nature Reserve, Singapore.

Length. 7.5–8.5 mm.

Specimens examined. VIETNAM: 3♂, Chute de Bobla, 7 km W of Dilinh, 840 m, 27.iv.1960, R. E. Leech (BPBM); 1♂, 9 km S of Dilinh, 24.iv.1960, R. E. Leech (BPBM).

Bionomics. Nothing is known.

Distribution. Philippines, *Vietnam, Thailand, Malaysia (as Malaya and Borneo), and Singapore.

Chrysomya megacephala (Fabricius, 1794)

Musca megacephala Fabricius, 1794: 317. Type locality: "Guinea", probably error, according to Senior-White *et al.* (1940).

Chrysomya megacephala: Fan 1965: 205 (Vietnam); Thinh 1988: 16 (Vietnam); Fan 1992: 544 (Vietnam); Xue and Chao 1996: 1467 (Vietnam); Fan 1997: 497 (Vietnam).

Length. 6.5–9.4 mm.

Specimens examined. VIETNAM: 41♂ 84♀, 10 km E of Ban Me Thout, 570 m, 9.v.1960, R. E. Leech (BPBM); 8♂ 41♀, 15 km NW of Dalat, 1,850 m, 5.v.1960, 9.v.1960, R. E. Leech and S. Quate (BPBM); 44♂ 52♀, Dalat, 1,500 m, 29.iv.–4.v.1960, 26–27.ix.1960, S. Quate, L. [W.] Quate and C. M. Yoshimoto (BPBM); 2♂ 33♀, Ban Me Thout, 500 m, 16–18.v.1960, R. E. Leech (BPBM); 6♂ 13♀, Chute de Bobla, 7 km W of Dilinh, 840 m, 27.iv.1960, R. E. Leech (BPBM); 3♂ 2♀, Nha Trang, 17–26.xi.1960, C. M. Yoshimoto (BPBM); 1♀, 17 km E of Dilinh, 1,300 m, 6–13.x.1960, C. M. Yoshimoto (BPBM); 2♂ 3♀, Ban Den Ray Ninn, 150 m, 7.viii.1960, R. E. Leech (BPBM); 3♀, Kontum, 570 m, 13–14.vi.1960, R. E. Leech (BPBM); 17♂, Blao [Balao], 500–600 m, 22.iv.1960, 14–21.x.1960, C. M. Yoshimoto (BPBM); 2♂ 4♀, Dilinh, 21.ix.1960, 27.ix.–14.x.1960, C. M. Yoshimoto (BPBM); 1♀, 18 km NW of Dalat, 1,300 m, 4–5.v.1960, S. Quate (BPBM); 1♂ 2♀, 15 km of Dalat, 1,500 m, 29.iv.–5.v.1960, S. Quate (BPBM); 2♂ 18♀, 15 km NW of Dalat, 1,850 m, 5.v.1960, L. W. Quate (BPBM); 1♀, 36 km S of Dalat, 1,300 m, 10.ix.1960, J. L. Gressitt (BPBM); 3♂, 6 km SW of Dalat, 1,550 m, 11.xi.1960, J. L. Gressitt (BPBM); 2♂, Dilinh, 920 m, 22–28.iv.1960, L. W. Quate (BPBM); 5♂ 6♀, 6 km S of Dalat, 1,400–1,500 m, 9.vi.–7.vii.1960, N. R. Spencer (BPBM); 2♀, 25 km SW of Pleiku, 400 m, 12.v.1960, L. W. Quate (BPBM); 1♀, Saigon, 18.ix.1961, G. Imadate (BPBM); 1♂ 1♀, 9 km S of Dilinh, 24.iv.1960, R. E. Leech (BPBM); 1♂, Bien Hoa, 10.ix.1960, C. R. Joyce (BPBM); 1♀, 9 km S of Dilinh, 24.iv.1960, R. E. Leech (BPBM); 1♀, Ninh Hoa, N of Nha Trang, 28.xi.1960, C. M. Yoshimoto (BPBM). LAOS: 5♂ 25♀, Vientiane, 31.v.–3.vi.1960, 26.v.1965, 28.v.1965, 31.v.–3.vi.1960, 8.v.1965, 29.v.1965, L. W. Quate, S. Quate, P. D. Ashlock, N. Wilson, and native collector (BPBM); 78♂ 50♀, Muong Sing, NW of Luang Prabang, 650 m, 6–10.vi.1960, S. Quate and L. [W.] Quate (BPBM); 1♀, Vientiane Prov., Ban Van Eue, 15.ii.1966, native collector (BPBM); 1♀, Dong Dok, 22.xi.1965, native collector (BPBM); 1♀, Luang Prabang, 300 m, 4–

5.vi.1960, L. W. Quate (BPBM); 1♂, Sedone Prov., Paksong, 17.v.1965, P. D. Ashlock (BPBM); 21♀, Num Ngum, 27.iii.1971, G. Mitsui (BPBM). CAMBODIA: 2♂ 5♀, Phnom Penh, 25 m, 27.iv.1961, 25.v.1967, N. R. Spencer and M. Delfinado (BPBM); 1♂ 9♀, Stung Mean Chey, 18.iv.1961, N. R. Spencer (BPBM); 1♂, Ariksatr, E of Mekong River, 8.iii.1968, D. E. Hardy (BPBM).

Bionomics. This is a common scavenger species and occasionally a causative agent of myiasis in humans and animals. Meat as well as sweets are attractive.

Distribution. Vietnam, *Laos, and *Cambodia. Widely distributed throughout the Oriental and Australasian regions.

Chrysomya nigripes Aubertin, 1932

Chrysomyia nigripes Aubertin, 1932: 26. Type locality: Trincomallee, Ceylon [Sri Lanka].

Ceylonomyia nigripes: Fan 1965: 196; Thinh 1988: 15 (Vietnam); Fan 1992: 536 (Vietnam); Xue and Chao 1996: 1404 (Vietnam); Fan 1997: 474 (Vietnam).

Length. 5.2–6.7 mm.

Specimens examined. VIETNAM: 1♂, 6 km S [of] Dalat, 1,400–1,500 m, 9.vi.–7.vii.1961, N. R. Spencer (BPBM); 1♀, Ban Me Thout, 500 m, 16–18.v.1960, R. E. Leech (BPBM); 1♂ 4♀, 6 km S of Dalat, 1,400–1,500 m, 9.vi.1961, N. R. Spencer (BPBM); 1♂, Chute de Bobla, 7 km W of Dilinh, 840 m, 27.iv.1960, R. E. Leech (BPBM). LAOS: 1♂ 1♀, Nam Ngum, 27.iii.1971, G. Mitsui (TMDU); 1♂, Muong Sing, NW of Luang Prabang, 650 m, 6–10.vi.1960, S. Quate and L. [W.] Quate (BPBM); 1♀, Vientiane Prov., Ban Van Eue, 15.ii.1967, native collector (BPBM).

Bionomics. Nothing is known.

Distribution. Micronesia, Taiwan, Philippines, Vietnam, *Laos, Thailand, Malaysia, Indonesia, India, and Sri Lanka.

Chrysomya pinguis (Walker, 1858)

Lucilia pinguis Walker, 1858: 213. Type locality: India.

Chrysomyia pinguis: Thinh 1988: 16 (Vietnam); Xue and Chao 1996: 1469 (Vietnam).

Chrysomya (Compsomyia) pinguis: Fan 1992: 541 (Vietnam); 1997: 492 (Vietnam).

Length. 7.0–9.5 mm.

Specimens examined. VIETNAM: 11♂ 17♀, Chute de Bobla, 7 km W of Dilinh, 840 m, 27.iv.1960, R. E. Leech (BPBM); 1♂ 4♀, 10 km E of Ban Me Thout, 570 m, 9.v.1960, R. E. Leech (BPBM); 1♂, Dilinh, 1,200 m, 22–28.iv.1960, L. W. Quate (BPBM); 2♂ 6♀, 9 km S of Dilinh, 24.iv.1960, R. E. Leech (BPBM); 3♂ 2♀, Ap Hung-Lam, 21 km NW of Dilinh, 1,100 m, 29.ix.–5.x.1960, C. M. Yoshimoto (BPBM); 1♂, Dak Song, 76 km SW of Ban Me Thout, 870 m, 19–21.v.1960, S. Quate and L. [W.] Quate (BPBM); 1♂ 1♀, Blao [Balao], 600 m, 14–21.x.1960, C. M. Yoshimoto (BPBM); 1♂ 1♀, Fyan, 1,200 m, 11.vii.–9.viii.1961, N. R. Spencer (BPBM); 3♀, Dalat, 1,500 m, 29.iv.–4.v.1960, S. Quate and L. [W.] Quate (BPBM); 1♀, 25 km S of Pleiku, 400 m, 12.v.1960, L. W. Quate (BPBM); 1♀, Karyu Danar, 1,200 m, 13-28.ii.1961, N. R. Spencer (BPBM).

LAOS: 2♂ 3♀, Vientiane Prov., Ban Van Eue, 20.vii.1966, 30.iii.1967, native collector (BPBM); 1♂, Vientiane Prov., Ban Van Eue, Phou Kou Khouei, 15.iv.1965, J. L. Gressitt (BPBM); 1♀, Sedone, Paksa, 31.v.1967, native collector (BPBM); 2♀, Vientiane, Gi Sion, 7–21.ii.1965, 19–26.xii.1965, native collector (BPBM).

Bionomics. Larvae breed in dead birds and other small animals.

Distribution. Japan, Korea, Taiwan, Philippines (Palawan, Tawi Tawi), China, Vietnam, *Laos, Thailand, Malaysia (as Malaya and Borneo), Indonesia (Java), India, and Sri Lanka.

Chrysomya rufifacies (Macquart, 1843)

Lucilia rufifacies Macquart, 1843: 303. Type locality: "Nouvelle-Hollande" [Australia].
Lucilia orientalis Macquart, 1843: 302.
Achoetandrus rufifacies: Fan 1965: 199 (Vietnam); Thinh 1988: 15 (Vietnam); Fan 1992: 538 (Vietnam); Xue and Chao 1996: 1463 (Vietnam); Fan 1997: 478 (Vietnam).

Length. 6.0–9.5 mm.

Specimens examined. VIETNAM: 1♀, 15–35 km NW of Phan Rang, 8–16.xi. 1960, C. M. Yoshimoto (BPBM); 1♂ 6♀, Chute de Bobla, 7 km W of Dilinh, 840 m, 27.iv.1960, R. E. Leech (BPBM); 2♀, Ban Me Thout, 500 m, 16–18.v.1960, R. E. Leech (BPBM); 1♂ 3♀, 10 km E of Ban Me Thout, 570 m, 9.v.1960, R. E. Leech (BPBM); 1♀, 9 km S of Dilinh, 24.iv.1960, R. E. Leech (BPBM). LAOS: 1♀, Vientiane, 31.v.–3.vi.1960, S. Quate and L. [W.] Quate (BPBM).

Bionomics. First larval stage is necrophagous but later stages are predaceous on other necrophagous fly larvae in the same breeding places. The adult is not attracted to any kind of food.

Distribution. Vietnam and *Laos. Throughout the Oriental and Australasian regions.

Chrysomya villeneuvi Patton, 1922

Chrysomya villeneuvi Patton, 1922: 567. Type locality: S. India.
Achaetandrus villeneuvi: Thinh 1988: 15 (Vietnam).

Length. 7.5–9.2 mm.

Specimens examined. VIETNAM: 9♂ 3♀, Chute de Bobla, 7 km W of Dilinh, 840 m, 27.iv.1860, R. E. Leech (BPBM); 2♂ 2♀, 19 km E of Ban Me Thout, 570 m, 9.v.1960, R. E. Leech (BPBM); 1♀, 31 km S of Dilinh, 1,050 m, 29.iv.1960, R. E. Leech (BPBM); 1♂, 20 km S of Dalat, 1,300 m, 12.ix.1960, J. L. Gressitt (BPBM); 1♀, 9 km S of Dilinh, 24.iv.1960, R. E. Leech (BPBM). LAOS: 1♂ 3♀, Vientiane Prov., Ban Van Eue, 750 m, forest streambed, 10–11.iv.1965, 30.ix.1965, native collector (BPBM); 1♀, Vientiane Prov., Gi Sion, 7–21.ii.1965, native collector (BPBM).

Bionomics. The second and third instar larvae are known to be predaceous on other dipteran larvae, even attacking predatory larvae such as *C. rufifacies*. Adult

habits are unknown, but it is not encountered indoors (Senior-White *et al.* 1940).

Distribution. China (Yunnan, Hainan I.), Vietnam, *Laos, Thailand, Malaysia (as Malaya and Borneo), Indonesia (Sumatra), Nepal, India, and Sri Lanka.

Subfamily **Rhiniinae**

Key to the tribes and genera of Rhiniinae

1. Arista pectinate ..... Tribe Rhiniini 2
– Arista pubescent or plumose, not pectinate ..... Tribe Cosmini 5
2. Outer *ph* absent; R_5 petiolate; body entirely metallic green or dark blue ..... *Chlororhinia*
– Outer *ph* present; R_5 usually open or closed, but petiolate in some species of *Rhinia* and *Stomorhina*; body variable in colour, often yellowish or reddish in part 3
3. Hind tibia without conspicuous row of *ad*, but with 2–3 *ad* as long as or longer than tibial diameter; R_5 open; body slender, parallel-sided; abdomen mostly testaceous ..... *Idiella*
– Hind tibia with conspicuous row of subequal setae on anterodorsal surface; these setae longer than general vestiture, sometimes with 2–3 rather strongly developed *ad* among them; R_5 open, closed, or petiolate; body rather stout with ovate abdomen; abdomen darkly coloured or entirely or largely yellowish orange 4
4. R_5 petiolate; sternopleuron brassy, without dusting; abdomen entirely or largely yellowish orange ..... *Rhinia*
– R_5 open at wing margin or closed; if petiolate, then sternopleuron heavily dusted; abdomen darkly coloured, at least with blackish patterns ..... *Stomorhina*
5. Arista plumose, with rays at least as long as width of 3rd antennal segment in anterior view; fore tibia with or without *p* 6
– Arista pubescent, with longest hairs never exceeding 1.5× width of 3rd antennal segment; fore tibia with 1 *p* 11
6. Outer *ph* absent; fore tibia without *p* 7
– Outer *ph* present; fore tibia with 1 *p*, except sometimes absent in *Malayomyza* 8
7. Prostigmatal bristle absent; 2 longitudinal stripes on thoracic dorsum silver-white or, if dorsum yellowish, then 2 longitudinal stripes fuscous ..... *Borbororhinia*
– Prostigmatal bristle present; yellowish brown thoracic dorsum with or without 3 longitudinal fuscous stripes or, if dorsum fuscous, then dorsum with 2 longitudinal, silver-white to grey stripes ..... *Sumatria*
8. Presutural *ac* absent or indistinct; *dc* and postsutural *ac* usually indistinct except for prescutellars; if 1–2 postsutural *ac* developed as prescutellars, then propleuron hairy ..... *Cosmina*
– At least 1 pair of presutural *ac* well developed; *dc* also well developed; propleuron bare 9
9. Fore tibia without *p*; body small, less than 4 mm in length, shininy blackish with bronze tinge; humerus, propleuron, and upper and anterior parts of mesopleuron reddish brown; abdomen reddish brown in part on tergites

1+2–3; male eyes dichoptic. No record from Indochina.....*Malayomyza*

– Fore tibia with 1 *p*; body medium or large-sized, usually with thorax metallic green, blue, or purple, more or less dusted; humerus, propleuron, and mesopleuron concolorous with thoracic dorsum; abdomen concolorous with thoracic dorsum, also dusted, sometimes tessellated; eyes in ♂ usually holoptic to subholoptic 10

10. Mesopleuron with group of bristles or bristle-like hairs on upper part below notopleuron; bend of 4th longitudinal vein evenly curved or angulated; male hypopygium normal-sized, scarcely visible in profile; sternite 6 of ♀ not protruding posteriorly .....*Isomyia*

– Mesopleuron without such group of bristles or bristle-like hairs on upper part below notopleuron; bend of 4th longitudinal vein smooth; male hypopygium remarkably large, larger than 1/2 total length of preabdominal segments; sternite 6 of ♀ widely uncovered by corresponding tergites, with posterior margin somewhat protruding outwards.....*Strongyloneura*

11. Propleuron hairy .....*Metallea*

– Propleuron bare.....*Rhyncomya*

Tribe **Rhiniini**
Genus ***Chlororhinia***

Chlororhinia Townsend, 1917: 191. Type species: *Chlororhinia viridis* Townsend, 1917, by original designation (=*Musca exempta* Walker, 1857).

Chlororhinia exempta (Walker, 1856)

Musca exempta Walker, 1856: 128. Type locality: Sarawak, Borneo [Malaysia].

Chlororhinia viridis Townsend, 1917: 191. Type locality: Shillong, Khasi Hills, Assam, India.

Chlororhinia exempta: Fan 1992: 553 (Laos); Xue and Chao 1996: 1501 (Laos); Fan 1997: 580 (Laos); Kurahashi *et al.* 1997: 58 (Laos).

Length. 4.5–5.5 mm.

Specimens examined. VIETNAM: 4♀, Dilinh, 1,200 m, 22–28.iv.1960, S. Quate (BPBM); 1♀, 31 km S of Dilinh, 1,050 m, 29.iv.1960, R. E. Leech (BPBM); 1♀, Mt. Lang Bian, 1,500–2,000 m, 19.v.–8.vi.1961, N. R. Spencer (BPBM). LAOS: 1♀, Vientiane Prov., Ban Van Eue, 14–15.iv.1965, J. L. Gressitt (BPBM); 2♀, Ban Van Eue, Phou Kou Khouei, 800 m, 12–13.iv.1965, J. L. Gressitt (BPBM); 2♀, Sedone Prov., Paksong, light trap, 18.v.1965, P. D. Ashlock (BPBM).

Bionomics. Nothing is known.

Distribution. Philippines (Palawan), *Vietnam, Laos, Malaysia (as Borneo), Australia (Queensland, New South Wales), ?Nepal, and India (Assam).

Genus *Rhinia*

Rhinia Robineau-Desvoidy, 1830: 422. Type species: *Rhinia testacea* Robineau-Desvoidy, 1830, by monotypy (=*Idia apicalis* Wiedemann, 1830).
Beccarimyia Rondani, 1873: 287. Type species: *Beccarimyia glossina* Rondani, 1873, by monotypy (=*Idia apicalis* Wiedemann, 1830).

Rhinia apicalis (Wiedemann, 1830)

Idia apicalis Wiedemann, 1830: 354. Type locality: Tenerife [Canary Is.].
Idia flavipennis Macquart, 1843: 282. Type locality: Java [Indonesia].
Idia pleuralis Thomson, 1869: 542. Type locality: Keeling Islands [Cocos Is., Indian Ocean].
Rhinia fulvipes Bigot, 1874: 239. Type locality: Ceylon [Sri Lanka].
Rhinia apicalis: Thinh 1988: 16 (Vietnam).

Length. 5.5–6.5 mm.

Specimens examined. VIETNAM: 3♀, Fyan, 900–1000 m, 11.vii.–9.viii.1961, N. R. Spencer (BPBM); 6♂ 5♀, Dalat, 1,500–1,550 m, 29.iv.–4.v.1960, 11.ix.1960, 26–27.ix. 1960, J. L. Gressitt, C. M. Yoshimoto and L. W. Quate (BPBM); 15♂ 49♀, 6 km S of Dalat, 1,400–1,500 m, 9.vi.–7.viii.1961, N. R. Spencer (BPBM); 1♂, 18 km NW of Dalat, 1,300 m, 4–5.v.1960, L. W. Quate (BPBM); 1♂, 15 km NW of Dalat, 1,850 m, 5.v.1960, S. Quate (BPBM); 1♀, 6 km SW of Dalat, 1,500 m, 12.ix.1960, J. L. Gressitt (BPBM).

Bionomics. Nothing is known.

Distribution. Philippines, *Vietnam, Thailand, Malaysia (as Malaya and Borneo), Indonesia (Java), Sri Lanka, Cocos (Keeling) Is., and Canary Is.

Genus *Stomorhina*

Idia Wiedemann, 1820: 21 (nec *Idia* Hübner, 1809, Lepidoptera). [Preoccupied]
Stomorhina Rondani, 1861: 9 (nom. nov. for *Idia* Wiedemann). Type species: *Musca lunata* Fabricius, 1805, designated by Brauer and Bergenstamm (1889: 154).
Idiellopsis Townsend, 1917: 190. Type species: *Idiellopsis similis* Townsend, 1917, by original designation (=*Idia xanthogaster* Wiedemann, 1820).
Euidiella Townsend, 1917: 192. Type species: *Musca discolor* Fabricius, 1794, by original designation.

Key to the species of *Stomorhina*

1. Mesopleuron with 1–2 bristles on upper corner of posterior margin 2
– Mesopleuron with complete row of black bristles on posterior margin..... ..... *S. procula*
2. Mesopleuron with no distinct piliferous spots 3
– Mesopleuron with distinct piliferous spots 4
3. Sternopleuron and mesopleuron densely yellow-pruinose; thoracic squama with lobulate inner margin; R_5 closed, petiolate. No record from Indochina .... *S. xanthogaster* (Wiedemann, 1820)

- Sternopleuron and hypopleuron glossy black, not pruinose; R_5 open; abdomen dark violet ..... *S. melastoma*
4. Legs wholly testaceous ..... *S. luteigaster*
- Legs at least partly black 5
5. Abdomial tergite 1+2 yellow except for black or brown posterior margin; R_5 open ..... *S. discolor*
- Abdominal tergite 1+2 black or brown, never with testaceous spots; R_5 closed... ..... *S. siamensis*

Stomorhina discolor (Fabricius, 1794)

Musca discolor Fabricius, 1794: 320. Type locality: "Ind. Or."
Idia metallica Macquart, 1835: 246. Type locality: Bengal [probably Bangladesh].
Idia quadrimaculata Macquart, 1851: 213. Type locality: Java [Indonesia].
Idia aequalis Walker, 1859: 103. Type locality: Aru Island, Moluccas [Indonesia].
India cincta Bigot, 1874: 238. Type locality: Ceylon [Sri Lanka].
Stomorhyna muscina Rondani, 1875: 429. Type locality: Sarawak, Borneo [Malaysia].
Stomorhina scalaris Bigot, 1887: 591. Type locality: Ternate [Indonesia].
Rhinia discolor: Fan 1965: 215 (Vietnam); 1992: 559 (Vietnam); 1997: 600 (Vietnam).
Stomorhina discolor: Thinh 1988: 16 (Vietnam); Xue and Chao 1996: 1508 (Vietnam).

Length. 4.5–6.7 mm.

Specimens examined. VIETNAM: 3♂ 2♀, Dalat, 1,500–1,550 m, 29.iv.–4.v.1960, 11.ix.1960, J. L. Gressitt and S. Quate (BPBM); 1♂, Blao (Balao), 500 m, 14–21.x.1960, C. M. Yoshimoto (BPBM); 1♂ 1♀, 22 km S of Nha Trang, 20–26.xi.1960, C. M. Yoshimoto (BPBM); 1♂, 6 km S of Dalat, 1,400–1,500 m, 9.vi.–7.vii.1961, N. R. Spencer (BPBM); 2♀, 22 km N of Dilinh, 300 m, 22–28.iv.1960, S. Quate (BPBM); 2♂ 2♀, Dilinh, 920–1,200 m, 22–28.iv.1960, S. Quate (BPBM); 2♂ 4♀, 50 km SW of Pleiku, 250 m, 14.v.1960, L. W. Quate (BPBM); 1♀, Phan Rang, 14 km N of Nha Ho, 15.xi.1960, C. M. Yoshimoto (BPBM); 1♂ 1♀, Mt. Lang Bian, 1,500–2,000 m, 19.v.–8.vi.1961, N. R. Spencer (BPBM); 1♀, Ban Me Thout, 500 m, 16–18.v.1960, S. Quate (BPBM); 1♀, 60 km SW of Blao (Balao), 500 m, 22.iv.1960, S. Quate (BPBM); 1♀, Chute de Bobla, 7 km W of Dilinh, 800 m, human feces, 27.iv.1960, R. E. Leech (BPBM); 1♀, 6 km S of Dalat, 1,400–1,500 m, 9.vi.–7.vii.1961, N. R. Spencer (BPBM); 1♀, 24 km E of Dilinh, 900 m, 25.iv.1960, R. E. Leech (BPBM); 1♂, 7 km SE of Dilinh, 990 m, 2.v.1960, R. E. Leech (BPBM); 1♂, 25 km SW of Pleiku, 400 m, 12.v.1960, L. W. Quate (BPBM); 1♂, 20 km SW of Dilinh, 900 m, 22–28.iv.1960, L. W. Quate (BPBM); 3♂, 28 km N of Dilinh, 300–900 m, 22–28.iv.1960, L. [W.] Quate and S. Quate (BPBM); 1♂, 10 km E of Ban Me Thout, 570 m, 9.v.1960, R. E. Leech (BPBM). LAOS: 1♂, Dong Dok, 30.ix.1965, native collector (BPBM); 4♂ 1♀, Phou-kow-kuei, N of Vientiane, 800 m, 10–14.iv.1965, J. L. Gressitt (BPBM); 1♀, Muong Sing, NW of Luang Prabang, 650 m, 6–10.vi.1960, S. Quate and L. [W.] Quate (BPBM); 1♀, Vientiane, light trap, 31.v.–3.vi.1965, S. Quate and L. [W.] Quate (BPBM); 1♂ 1♀, [no locality given], 18.vi.1965, J. A. Rondon (BPBM); 1♂, Ban Van Eue, SE of Phou-kow-kuei, 800 m, 11.iv.1965, J. L. Gressitt (BPBM).

Bionomics. Larvae were found living in the nest of the ant *Camponotus an-*

gusticollis (Jerdon, 1851). They fed on the ant material and were strongly negatively heliotropic (Senior-White *et al.* 1940). Kurahashi and Faurran (1980) reported the larvae were predaceous and attacked the house fly larvae in the rearing vessel.

Distribution. China (Zhejiang, Fujian, Hong Kong, Hainan I., Yunnan, Xizang), Taiwan, Philippines, Vietnam, *Laos, Thailand, Malaysia, Indonesia (Buru I.), Australia (Northern part), New Caledonia, Fiji, India, and Sri Lanka.

**Stomorhina luteigaster* (De Meijere, 1910)

Idia leuteigaster De Meijere, 1910: 339. Type locality: Semarang, Java [Indonesia].
Euidiella termitophila Senior-White, 1923: 45. Type locality: Lashio, Burma [Myanmar].

Length. 4.0–5.0 mm.

Specimens examined. VIETNAM: 1♀, 30 km NW of Pleiku, 300 m, 10.v.1960, L. W. Quate (BPBM); 1♂, 50 km SW of Pleiku, 250 m, 14.v.1960, L. W. Quate (BPBM); 1♀, Blao (Balao), 600 m, 14–21.x.1960, C. M. Yoshimoto (BPBM); 1♀, 20 km S of Dalat, 1,300 m, 12.ix.1960, J. L. Gressitt (BPBM). LAOS: 1♀, Vientiane Prov., Ban Van Eue, 750 m, forest streambed, Malaise trap, 10–11.iv.1965, J. L. Gressitt (BPBM); 1♀, Phou-kow-kuei, 16.iv.1965, J. L. Gressitt (BPBM).

Bionomics. Nothing is known.

Distribution. *Vietnam, *Laos, Indonesia (Java), Myanmar, and Nepal.

**Stomorhina melastoma* (Wiedemann, 1830)

Idia melastoma Wiedemann, 1830: 353. Type locality: Java [Indonesia].
Euidiella purpurea Townsend, 1917: 193. Type locality: Madras and E. Himalayas, India.
Idiella bipartia Malloch, 1929: 335. Type locality: Bettotan, near Sandakan, N. Borneo [Sabah, Malaysia].

Length. 8.0 mm.

Specimens examined. VIETNAM: 1♂ 1♀, Dok Song, 76 km SW of Ban Me Thout, 870 m, 19–21.v.1960, L. W. Quate (BPBM); 1♂, 60 km SW of Blao (Balao), 500 m, 22.iv.1960, S. Quate (BPBM). LAOS: 4♂ 8♀, Vientiane, 31.v.–3.vi.1960, S. Quate and L. [W.] Quate (BPBM); 1♂, Muong Sing, NW of Luang Prabang, 650 m, at light, 6–10.vi.1960, S. Quate (BPBM).

Bionomics. Males were reported to swarm like syrphid flies between March and April at the time of flowering of *Hevea brasiliensis* (Willd. ex Juss.) Müll. Arg. (Family Euphorbiaceae) (Senior-White *et al.* 1940).

Distribution. China (Southern part), *Vietnam, *Laos, Malaysia (as Borneo), Indonesia (Buru), Papua New Guinea (New Guinea), Australia (Queensland), Nepal, India (Himachal Pradesh, Madras), and Sri Lanka.

Stomorhina procula (Walker, 1849)

Idia procula Walker, 1849: 808. Type locality: ?Africa.
Idia quadrinotata Bigot, 1874: 238. Type locality: Sarawak, Borneo [Malaysia].
Euidiella nila Senior-White, 1922: 168. Type locality: Coonoor, Nilgiri Hills, India.
Stomorhina lunata: Séguy 1946: 90 (Laos). [Misidentified]
Rhinia lunata: Thinh 1988: 16 (Vietnam). [Misidentified]
Stomorhina lunata: Xue and Chao 1996: 1508 (Laos). [Misidentified]

Length. 5.5–7.0 mm.

Specimens examined. VIETNAM: 3♀, Mt. Lang Bian, 1,500–2,000 m, Malaise trap, 19.v.–8.vi.1961, N. R. Spencer (BPBM).

Bionomics. Nothing is known.

Distribution. Vietnam, Laos, Malaysia (as Malaya and Sarawak), Myanmar, Nepal, and India (Madras, Coonoor).

**Stomorhina siamensis* Kurahashi and Tumrasvin, 1992

Stomorhina siamensis Kurahashi and Tumrasvin, 1992: 38. Type locality: Fang, Doi Huai Hwer, Thailand.

Length. 5.0–7.0 mm.

Specimens examined. VIETNAM: 2♂ 10♀, 28 km N of Dilinh, 300–900 m, 22–28.iv.1960, S. Quate and L. [W.] Quate (BPBM); 2♀, 20 km SW of Dilinh, 1,200 m, 22–28.iv.1960, S. Quate (BPBM); 4♂, Dalat, 1,500 m, 29.iv.–4.v.1960, S. Quate and L. [W.] Quate (BPBM); 1♀, 6 km SW of Dalat, 1,550 m, 11.ix.1960, J. L. Gressitt (BPBM); 3♀, 20 km S of Dalat, 1,300 m, 12.ix.1960, J. L. Gressitt (BPBM); 2♀, Blao (Balao), 600 m, 14–21.x.1960, C. M. Yoshimoto (BPBM); 7♀, Dalat, 1,500 m, 29.iv.–4.v.1960, S. Quate and L. [W.] Quate (BPBM); 9♀, Fyan, 900–1,000 m, 11.vii.–9.viii.1961, N. R. Spencer (BPBM); 1♀, Ap Hung-Lam, 21 km NW of Dilinh, 1,100 m, 29.ix.–5.x.1960, C. M. Yoshimoto (BPBM); 1♂, Kontum, N of Pleiku, 550 m, 13.v.1960, L. W. Quate (BPBM). LAOS: 1♂, Phou-kow-kuei, N of Vientiane, 800 m, 17.iv.1965, J. L. Gressitt (BPBM); 1♀, Muong Sing, NW of Luang Prabang, 650 m, 6–10.vi.1960, L. W. Quate (BPBM).

Bionomics. Adults are found frequently on blossoms in forest areas. Females are sometimes attracted to decaying animal matter.

Distribution. *Vietnam, *Laos, and Thailand.

Genus *Idiella*

Idiella Brauer and Bergenstamm, 1889: 154. Type species: *Idia mandarina* Wiedemann, 1830, by original designation.

Key to the species of *Idiella*

1. Basicosta black; occipital dilatation, mesopleuron, and sternopleuron with distinct piliferous spots.....2
– Basicosta brown; occipital dilatation, mesopleuron, and sternopleuron with-

out distinct piliferous spots 3

2. Tergite 1+2 without lateral bristles among fine, yellow, general hairs; male hind tibia with long, fine hairs on posteroventral surface; length of these hairs more than tibial diameter ..... *I. divisa*
– Tergite 1+2 with 1 to several black lateral bristles among fine, yellow general hairs; male hind tibia without long, fine hairs on posteroventral surface; length of these hairs not exceeding tibial diameter ..... *I. euidielloides*
3. Second antennal segment reddish; mid tibia with 2 *p*, and with brush of hairs in ♂; male frons usually broader than width of ocellar triangle..... *I. mandarina*
– Second antennal segment fuscous; mid tibia with 1 *p*, but without brush of hairs on apex of inner surface in ♂; male frons variable in width ..... *I. tripartita*

Idiella divisa (Walker, 1861)

Idia divisa Walker, 1861: 267. Type locality: East India.
Idiella divisa: Peris 1956: 238 (Vietnam); James 1977: 545 (Vietnam); Thinh 1988: 16 (Vietnam); Xue and Chao 1996: 1502 (Vietnam); Fan 1997: 583 (Vietnam).

Length. 5.0–8.0 mm.

Specimens examined. VIETNAM: 1♂ 1♀, Kontum, N of Pleiku, 550 m, 13.v.1960, L. W. Quate (BPBM); 1♂ 1♀, Chute de BoBla [Bobla], 7 km W of Dilinh, 840 m, 27.iv.1960, R. E. Leech (BPBM); 1♀, Mt. Lang Bian, 1,500–2,000 m, 19.v.–8.vi.1961, N. R. Spencer (BPBM); 1♀, 40 km N of Dilinh, 540 m, 26.iv.1960, R. E. Leech (BPBM); 3♂ 8♀, Fyan, 900–1,200 m, 11.vii.–9.viii.1961, N. R. Spencer (BPBM); 1♂, 30 km N of Dilinh, 27.iv.1960, S. Quate (BPBM). LAOS: 2♂ 1♀, Ban Van Eue, 14–15.iv.1965, 1–15.v.1965, 29.iv.1966, J. L. Gressitt, J. A. Randon, and native collector (BPBM).

Bionomics. Nothing is known.

Distribution. China (Southern part), Vietnam, *Laos, Thailand, Malaysia (as Malaya and Borneo), Indonesia (Sulawesi), Nepal, and India.

****Idiella euidielloides*** Senior-White, 1923

Idiella euidielloides Senior-White, 1923: 166. Type locality: Shillong, Assam, India.

Length. 5.0–7.0 mm.

Specimens examined. VIETNAM: 2♂, 17 km S of Dilinh, 1,300 m, 6–13.x.1960, C. M. Yoshimoto (BPBM); 1♂, Dilinh, 1,200 m, 22–28.iv.1960, L. W. Quate (BPBM).

Bionomics. Nothing is known.

Distribution. Taiwan, Philippines (Palawan), China (Fukien, Yunnan), *Vietnam, Thailand, Malaysia (as Malaya and Borneo), Indonesia (Java), India (Assam), and Sri Lanka.

Idiella mandarina (Wiedemann, 1830)

Idia mandarina Wiedemann, 1830: 350. Type locality: China.
Idia bengalensis Robineau-Desvoidy, 1830: 421. Type locality: Bengal [probably Bangladesh].
Idia nigricauda Bigot, 1874: 237. Type locality: Burma [Myanmar].
Idia tricolor Bigot, 1874: 236. Type locality: Unknown.
Stomorhina bivittata Bigot, 1887: 592. Type locality: "Hindustan" [India].
Idia floccosa Villeneuve, 1927: 395. Type locality: Kanshirei, Suikenkayaku, Tainan, Takao, Polisha, Kosempo, and Chip-Chip, Formosa [Taiwan].
Idiella mandarina: Thinh 1988: 16 (Vietnam); Fan 1992: 556 (Vietnam); Xue and Chao 1996: 1503 (Vietnam); Fan 1997: 586 (Vietnam).

Length. 8.5–9.0 mm.

Specimens examined. LAOS: 1♂, Vientiane Prov., Phou Kou Khouei, 300–600 m, 10.iv.1965, J. L. Gressitt (BPBM); 1♀, Vientiane Prov., Tha Ngone, 3.i.1966, native collector (BPBM).

Bionomics. Nothing is known.

Distribution. Taiwan, China (Southern part), Vietnam, *Laos, Thailand, Malaysia (as Malaya and Borneo), Indonesia (Sumatra, Timor, ?Kai Is.), Papua New Guinea, Myanmar, Bangladesh, India, and Sri Lanka.

**Idiella tripartita* (Bigot, 1874)

Idia tripartita Bigot, 1874: 236. Type locality: "Indes orientales".

Length. 7.5–8.0 mm.

Specimens examined. VIETNAM: 1♀, Dalat, 1,500 m, 29.iv.–4.v.1960, C. M. Yoshimoto (BPBM); 1♀, 17 km S of Dilinh, 1,300 m, 6–13.x.1960, C. M. Yoshimoto (BPBM); 1♂ 1♀, Fyan, 1,200 m, 11.vii.–9.viii.1961, N. R. Spencer (BPBM). LAOS: 1♀, Vientiane Prov., Ban Van Eue, 750 m, forest streambed, Malaise trap, 10–11.iv.1965, J. L. Gressitt (BPBM).

Bionomics. Nothing is known.

Distribution. Philippines (Palawan, Tawi Tawi), *Vietnam, *Laos, Myanmar, Nepal, and India (Sikkim).

Tribe **Cosminini**
Genus ***Cosmina***

Cosmina Robineau-Desvoidy, 1830: 423. Type species: *Cosmina fuscipennis* Robineau-Desvoidy, 1830, designated by Brauer and Bergenstamm (1889: 153).

Key to the species of *Cosmina*

1. Palpus not entirely black, red or yellowish brown at least on basal third; mesopleuron with yellow fine hairs along posterior margin; tibia reddish brown.....2
– Palpus entirely black; mesopleuron with black fine hairs along posterior mar-

gin; femur and tibia blackish ..... *C. bipulmosa*

2. Palpus largely reddish brown, sometimes darkened apically in ♀, but without distinct contrast; at least one pair of presutural *ac* developed; mesonotum entirely silver-grey dusted, without dark, longitudinal stripe; hind tibia with 1 *av* in ♂; in male eye, facets of upper 2/3 large, demarcated from lower 1/3; mid tibia with 1 strong *v* in ♂ ..... *C. thailandica*

– Palpus black except for red base; presutural *ac* absent; mesonotum with trace of 2–5 longitudinal stripes; male eye facets homogeneous; hind tibia with 0–1 *v* in ♂; mid tibia without *v* in ♂ 3

3. Epaulet reddish brown; hind tibia without *av* in ♂ 4

– Epaulet black; hind tibia usually with 1 *av* in ♂ or, if no *av* on hind tibia, then submedian mesonotal stripe distinct and broad anteriorly 5

4. Propleuron bare; submedian mesonotal stripes narrow, indistinct, covered with dusting, but 4 stripes visible ..... *C. vanidae*

– Propleuron hairy; submedian mesonotal stripes broad, distinct, and 5 stripes visible ..... *C. bicolor*

5. Propleuron bare in center; mesonotum with 2 rather broad longitudinal stripes; mesopleuron largely metallic green; ovipositor with strong spines ..... *C. limbipennis*

– Propleuron hairy in center; mesonotum with 4–5 longitudinal stripes; mesopleuron entirely purple-tinged; ovipositor without spines. No record from Indochina ..... *C. nipae* Kurahashi, 1995

Cosmina bicolor (Walker, 1856)

Idia bicolor Walker, 1856: 23. Type locality: Malacca [Malaysia].

Cosmina coomani Séguy, 1946: 88. Type locality: Hoa Bin, Vietnam. [Synonymy with a query]

Cosmina bicolor: Séguy 1946: 88 (Vietnam); James 1977: 544 (Vietnam); Fan 1992: 567 (Vietnam); Xue and Chao 1996: 1478 (Vietnam); Fan 1997: 523 (Vietnam).

Length. 5.3–8.0 mm.

Specimens examined. VIETNAM: 1♂, 15 km NW of Dalat, 1,840 m, 5.v.1960, C. M. Yoshimoto (BPBM); 2♀, 25 km SW of Pleiku, 400 m, human feces, 12.v.1960, L. W. Quate (BPBM); 1♀, 22 km S of Nha Trang, 20–26.xi.1960, C. M. Yoshimoto (BPBM); 1♂, Nha Trang, 17–26.xi.1960, C. M. Yoshimoto (BPBM). LAOS: 1♂ 5♀, Vientiane Prov., Vientiane, 2.viii.1965, 21.viii.1966, F. G. Howarth and native collector (BPBM); 1♂ 1♀, Borikhane Prov., Paksane, 17.viii.1965, 9.ix.1965, native collector (BPBM); 3♂, Sedone Prov., Paksong, 20.viii.1965, 6.ix.1965, native collector (BPBM); 3♂ 3♀, Vientiane Prov., Dong Dok, 23.viii.1965, 2.ix.1965, native collector (BPBM); 2♂ 5♀, Nongtevada, 6.viii.1965, 16.viii.1965, 25.viii.1965, 30.viii.1965, 8.ix.1965, 14.ix.1965, native collector (BPBM); 2♂ 6♀, Vientiane Prov., Tha Ngone, 21.viii.1965, 6.ix.1965, 11.ix.1965, 29.ix.1965, 6.xi.1965, native collector (BPBM); 1♂ 1♀, Sayaboury Prov., Sayaboury, Malaise trap, 10.ii.1966, 2.iii.1966, native collector (BPBM).

Bionomics. Nothing is known.

Distribution. China (Yunnan), Vietnam, *Laos, Thailand, Malaysia (as Malaya and Borneo), Indonesia (Sumatra, Java), Myanmar, and India.

**Cosmina biplumosa* (Senior-White, 1924)

Stomorhina biplumosa Senior-White, 1924: 110. Type locality: Doi Chum Chang, near Chengmai (=Chiangmai), N. Siam [Thailand].
Cosmina nigrocoerulea Malloch, 1926: 519. Type locality: Kuala Tahan, Pahang, Malaya [Malaysia].

Length. 10.5–11.5 mm.
Specimens examined. VIETNAM: 2♀, 20 km N of Pleiku, 650 m, 9.v.1960, L. W. Quate (BPBM).
Bionomics. Nothing is known.
Distribution. *Vietnam, Thailand, Malaysia (as Malaya), and Indonesia (Sumatra).

Cosmina limbipennis (Macquart, 1848)

Idia limbipennis Macquart, 1848: 214. Type locality: Java [Indonesia].
Cosmina confusa Malloch, 1929: 339. Type locality: Langkawi Island, W. Coast, Malaya [Malaysia].
Cosmina limbipennis: Fan 1992: 568 (Vietnam); Xue and Chao 1996: 1479 (Vietnam); Fan 1997: 526 (Vietnam).

Length. 4.0–7.5 mm.
Specimens examined. VIETNAM: 18♂ 12♀, M'Drak, E of Ban Me Thout, 4[00]–600 m, 8–19.xii.1960, C. M. Yoshimoto (BPBM); 2♂ 1♀, Dailanh, N of Nha Trang, 30.xi.–5.xii.1960, C. M. Yoshimoto (BPBM); 7♂ 4♀, Ban Me Thout, 500 m, 16–18.v. 1960, 20–24.xii.1960, S. Quate and C. M. Yoshimoto (BPBM); 1♂, 20 km S of Dalat, 1,300 m, 12.ix.1960, J. L. Gressitt (BPBM); 1♂, 25 km SW of Pleiku, 400 m, 12.v.1960, L. W. Quate (BPBM); 2♂, 22 km S of Nha Trang, 20–26.xi.1960, C. M. Yoshimoto (BPBM); 1♂, Dalat, 500 m, 26–27.ix.1960, C. M. Yoshimoto (BPBM). LAOS: 12♂ 17♀, Dong Dok, 23.viii.1965, 7–22.ix.1965, 11.ix.1965, 30.ix.1965, 3.xi.1965, 17–22.xi.1965, 26.xi.1965, 1.xii.1965, 8.i.1966, native collector (BPBM); 9♂ 10♀, Borikhane Prov., Paksane, 31.viii.1965, 9.ix.1965, 1–15.xi.1965, 5.xi.1965, 19.xi.1965, 13–28.xii.1965, 7.i. 1966, native collector (BPBM); 11♂ 17♀, Vientiane Prov., Tha Ngone, 29.vii.1965, 18.viii.1965, 21.viii.1965, 1.ix.1965, 16–23.ix.1965, 29.ix.1965, 6.xi.1965, 16.xi.1965, 20.xi.1965, 25.xi.1965, 4.xii.1965, 9.xii.1965, 21.xii.1965, 2.ii.1966, native collector (BPBM); 2♀, Vientiane Prov., Gi Sion Vill., de Tha Ngone, 10–30.i.1966, 21–28.ii. 1966, native collector (BPBM); 5♂ 4♀, Vientiane Prov., Vientiane, 29.vii.1965, 29–31.vii.1965, 2.viii.1965, native collector (BPBM); 15♂ 13♀, Nongtevada, 27.v.1965, 18.viii.1965, 25–30.viii.1965, 6–18.ix.1965, 4–23.xi.1965, 2–23.xii.1965, native collector (BPBM); 1♂ 1♀, Sayaboury Prov., Sayaboury, 3.viii.1965, 12.ii.1966, native collector (BPBM); 1♀, Wapikhamthong Prov., Khong Sedone, 17.vii.1965, native collector (BPBM); 1♀, Wapikhamthong Prov., Wapi, 15.ix.1967, native collector (BPBM); 4♂ 6♀, Sedone Prov., Paksong, 20–28.viii.1965, 28.viii.1965, 6.ix.1965, native collector (BPBM); 2♂, Sedone Prov., Paksong-Pakong, 20.ix.1965, native collector (BPBM). CAMBODIA: 2♀, Kiri Rom, 700 m, 31.iii.1961, 1–7.iv.1961, N. R. Spencer (BPBM).
Bionomics. Nothing is known.

Distribution. Vietnam, *Laos, *Cambodia, Thailand, Malaysia (as Malaya), Indonesia (Java, Bali), and India (Assam).

**Cosmina thailandica* Kurahashi, 1995

Cosmina thailandica Kurahashi, 1995: 357. Type locality: Fang, Doi Huai Hwer, Thailand.

Length. 6.5–8.5 mm.

Specimens examined. VIETNAM: 2♀, Dailanh, N of Nha Trang, 30.xi.–5.xii.1960, C. M. Yoshimoto (BPBM); 1♂, 34 km N of Phan Rang, 9.xi.1960, C. M. Yoshimoto (BPBM); 1♂, Nha Trang, 17–26.xi.1960, C. M. Yoshimoto (BPBM). LAOS: 6♂ 12♀, Vientiane Prov., Ban Van Eue, 15.ii.1968, 31.xii.1968, native collector (BPBM); 3♂, Wapikhamthong Prov., Wapi, 31.v.1967, native collector (BPBM). CAMBODIA: 17♂ 14♀, Kiri Rom, 700 m, 31.iii.1961, 1–7.iv.1961, N. R. Spencer (BPBM).

Bionomics. Nothing is known.

Distribution. *Vietnam, *Laos, *Cambodia, and Thailand.

**Cosmina vanidae* Kurahashi, 1995

Cosmina vanidae Kurahashi, 1995: 362. Type locality: Chiangmai University, Chiang Mai, Thailand.

Length. 5.0–8.0 mm.

Specimens examined. VIETNAM: 2♀, 34 km N of Phan Rang, 4.xi.1960, C. M. Yoshimoto (BPBM); 2♀, M'Drak, E of Ban Me Thout, 4[00]–600 m, 8–19.xii.1960, C. M. Yoshimoto (BPBM); 2♀, Ban Me Thout, 500 m, 16–18.v.1960, S. Quate (BPBM). LAOS: 3♂ 7♀, Nongtevada, 27.vii.1965, 6.viii.1965, 18.viii.1965, 25.viii.1965, 30.viii.1965, native collector (BPBM); 4♂ 2♀, Borikhane Prov., Paksane, 31.viii.1965, 9.ix.1965, native collector (BPBM); 7♂ 2♀, Vientiane Prov., 31.vii.1965, 2–3.viii.1965, native collector (BPBM); 5♂ 7♀, Vientiane Prov., Tha Ngone, 19–21.viii.1965, 21–23.viii.1965, 3.ix.1965, 6.ix.1965, 23.ix.1965, 29.ix.1965, 2.ii.1966, native collector (BPBM); 1♀, Sayaboury Prov., Sayaboury, 3.viii.1965, native collector (BPBM); 1♂ 3♀, Sedone Prov., Paksong, 20.viii.1965, 6.ix.1965, native collector (BPBM); 1♀, 15–35 km NW of Phan Pang, 8–16.xi.1965, native collector (BPBM); 1♂, Borikhane Prov., Pakkding, 100–200 m, 23.iv.1965, J. L. Gressitt (BPBM); 1♀, Wapikhamthong Prov., Khong Sedone, 19.vii.1965, native collector (BPBM); 2♀, Sedone Prov., Paksong–Pakong, 20.ix.1965, native collector (BPBM); 1♂, Dong Dok, 7.ix.1965, native collector (BPBM).

Bionomics. Nothing is known.

Distribution. *Vietnam, *Laos, and Thailand.

Genus *Borbororhinia*

Borbororhinia Townsend, 1917: 188. Type species: *Borbororhinia pubescens* Townsend, 1917, by original designation (=*Idia bivittata* Walker, 1856).

Key to the species of *Borbororhinia*

1. Lower half of notopleuron yellow, concolorous with mesopleuron .... *B. nigridorsum*
– Notopleuron wholly fuscous brown ..... *B. bivittata*

Borbororhinia bivittata (Walker, 1856)

Idia bivittata Walker, 1856: 128. Type locality: Sarawak, Borneo [Malaysia].
Borbororhinia pubescens Townsend, 1917: 188. Type locality: Param-bikulam, Cochin, India.
Alikangia pulchella Villeneuve, 1927: 390. Type locality: Alikang and Toyenmon-gai, Formosa [Taiwan].
Borbororhinia bivittata: Séguy 1946: 90 (Laos); James 1977: 544 (Laos); Fan 1992: 562 (Laos); Xue and Chao 1996: 1477 (Laos); Fan 1997: 506 (Laos).

Length. 5.8–7.0 mm.

Specimens examined. VIETNAM: 1♀, Dilinh, 1,200 m, 22–28.iv.1960, L. W. Quate (BPBM); 1♀, 17 km S of Dilinh, 1,300 m, 6–12.x.1960, C. M. Yoshimoto (BPBM). LAOS: 1♀, Phou-kow-kuei, 800 m, 14–19.iv.1965, J. L. Gressitt (BPBM).

Bionomics. Oviparous species but embryonic development belived to occur prior to oviposition (Senior-White *et al.* 1940). Adult flies can be obtained in quantity at any time by cutting into a nest of any of the mound-building termites in Sri Lanka and southern parts of India (Senior-White *et al.* 1940).

Distribution. China, Taiwan, Philippines (Mindoro, Palawan, Tawi Tawi), *Vietnam, Laos, Thailand, Malaysia (as Malaya, Sarawak), Indonesia (Java, Buru I.), India (Assam, Kerala), and Sri Lanka.

**Borbororhinia nigridorsum* Kurahashi, Benjaphong and Omar, 1997

Borbororhinia nigridorsum Kurahashi, Benjaphong and Omar, 1997: 69. Type locality: Balai Ringgin, 100 km N of Kuching, Sarawak, Malaysia.

The Indochinese specimens appear to be different in body coloration from typical Malaysian ones. The thoracic dorsum is usually reddish brown, but never blackish as in the Malaysian form. However the similar male genitalia suggest that these two forms are conspecific.

Length. 7.5–7.8 mm.

Specimens examined. LAOS: 1♂, Vientiane Prov., Ban Van Eue, 750 m, forest streambed, Malaise trap, 10–11.iv.1965, J. L. Gressitt (BPBM); 1♂ Phou-kow-kuei, 800 m, 14–19.iv.1965, J. L. Gressitt (BPBM).

Bionomics. Nothing is known.

Distribution. Laos and Malaysia (Sarawak).

Genus *Sumatria*

Sumatria Malloch, 1926: 512. Type species: *Sumatria latifrons* Malloch, 1926, by original designation.

Key to the species of *Sumatria*

1. Arista with short hairs on ventral side; femora predominantly brownish 2
– Arista distinctly and symmetrically plumose, hairs equally long on dorsal and ventral sides; femora predominantly testaceous 3
2. Legs wholly brownish black .....*S. brevis*
– Coxae testaceous, femora partly testaceous .....*S. latifrons*
3. Thoracic dorsum testaceous with three dark, longitudinal stripes separated by silver-grey dusted areas, latter more distinct on scutum; upper most *ori* (or preverticals) developed and directed outward in ♂; fore tibia without *ad*..... .....*S. chiekoae*
– Thoracic dorsum usually fuscous on disc with trace of three dark, longitudinal stripes separated by obscure, dark-grey dusted areas; upper most *ori* proclinate and inclinate in ♂; fore tibia with 1 short *ad* .....*S. vittata*

**Sumatria brevis* James, 1966

Sumatria brevis James, 1966: 484. Type locality: Pinigisan, Mantalingajan Range, Palawan, Philippines.

The specimens from Vietnam and Laos have an entirely blackish abdomen. This abdominal coloration is somewhat different from that of type material from Palawan.

Length. 3.5 mm.

Specimens examined. VIETNAM: 1 ♂, Dalat, 1,550 m, 11.ix.1960, J. L. Gressitt (BPBM). LAOS: 1♂, Vientiane Prov., Ban Van Eue, 750 m, streambed, Malaise trap, 10–11.iv.1965, J. L. Gressitt (BPBM).

Bionomics. Nothing is known.

Distribution. *Vietnam, *Laos, and Philippines (Palawan).

**Sumatria chiekoae* Kurahashi and Tumrasvin, 1992

Sumatria chiekoae Kurahashi and Tumrasvin, 1992: 42. Type locality: Doi Inthanon, Thailand.

Length. 5.0–5.5 mm.

Specimens examined. VIETNAM: 2♀, 6 km SW of Dalat, 1,550 m, 11.ix.1960, J. L. Gressitt (BPBM); 1♀, Dalat, 1,500 m, 29.iv.–4.v.1960, S. Quate (BPBM); 1♂, 17 km S of Dilinh, 1,300 m, 6–13.x.1960, C. M. Yoshimoto (BPBM).

Bionomics. Adults are found in mountainous forests more than 1,300 m above sea level.

Distribution. *Vietnam, Thailand, and Malaysia (as Malaya).

**Sumatria latifrons* Malloch, 1926

Sumatria latifrons Malloch, 1926: 512. Type locality: Sumatra [Indonesia].

Length. 5.0 mm.

Specimen exmained. VIETNAM: 1♂, Mt. Lang Bian, 1,500–2,000 m, 19.v.–8.vi.1961, N. R. Spencer (BPBM).

Bionomics. Nothing is known.

Distribution. *Vietnam, Malaysia (as Malaya and Borneo), and Indonesia (Sumatra).

**Sumatria vittata* (Peris, 1952)

Sumatria vittata Peris, 1952: 227. Type locality: Burma [Myanmar].

Length. 5.0–5.5 mm.

Specimens examined. VIETNAM: 3♂, Dalat, 1,500–1,550 m, 29.iv.–5.v.1960, S. Quate (BPBM); 1♀, Mt. Lang Bian, 1,500–2,000 m, 19.v.–8.vi.1961, N. R. Spencer (BPBM).

Bionomics. Adults are found only in mountainous forest more than 1,500 m above sea level.

Distribution. *Vietnam and Myanmar.

Genus *Isomyia*

Musca, subg. *Isomyia* Walker, 1860: 134. Type species: *Musca delectans* Walker, 1860, by monotypy.

Key to the species of *Isomyia*

1. Lunule with several short, black setulae; body blackish with purplish reflections; mesonotum and dorsal surface of abdomen rather uniformly cinereous-dusted; wing infuscated on more than apical third ..... *I. lugubris*
– Lunule bare; body metallic, blue and green; mesonotum and dorsal surface of abdomen more or less dusted, abdomen sometimes densely dusted and tessellated; wings hyaline or clouded apically 2
2. Subcostal sclerite next to humeral cross-vein bare below 3
– Subcostal sclerite next to humeral cross-vein setulose below 19
3. Thoracic squama strongly lobulate; body very stout 4
– Thoracic squama generally not lobulate and not reaching base of scutellum, with its longitudinal diameter exceeding transverse one; body usually slender 15

4. Mesopleural hairs, and hairs of other pleural areas as well, soft and yellow to golden, except for usual black setulae just below notopleural suture; mesothoracic spiracle yellow 5
– Mesopleural hairs, and hairs of other pleural areas, more extensively black than indicated above, with some soft, yellow hairs on mesopleuron, sometimes remote from notopleural suture, and on sternopleuron; mesothoracic spiracle usually fuscous 7
5. Basicosta bright yellow; epaulet yellowish ..... *I. viridaurea*
– Basicosta black; epaulet black 6
6. Tergites 3–4 without marginal band; wing hyaline, sometimes slightly infuscated apically in ♀; parafrontalia in ♀ subequal in width to frontal stripe at middle of frons; hind tibia without *av* in ♂ ..... *I. electa* (in part)
– Tergites 3–4 with distinct marginal band and median stripe in ♂, and with broad metallic band with copper tinge in ♀; wing hyaline in ♂, with distinct fuscous cloud apically in ♀; parafrontalia in ♀ about half as wide as frontal stripe at middle of frons; hind tibia with 1 *av* in ♂ ..... *I. borneensis* (in part)
7. Four strong lateral scutellar bristles present, last three spaced at closer intervals than basal two 8
– Three strong lateral scutellar bristles present, spaced at approximately equal intervals 10
8. Gena, parafrontalia, and parafacialia black; lower part of parafacialia and part of gena devoid of dusting, and shiny; squamae whitish on basal part ..... *I. ceballosi*
– Gena, parafrontalia, and parafacialia golden to brownish yellow; gena and parafacialia wholly dusted; squamae entirely brown to blackish brown 9
9. Entire lunule, parafrontalia, parafacialia, and gena uniformly golden-brown dusted ..... *I. aurifacies*
– Lunule submetallic anteriorly; parafrontalia and parafacialia not uniformly dusted and coloured, cinereous to brownish; only gena as above ..... *I. perisi*
10. Pleura with extensive yellow hairs, at least around stigmatal and propleural bristles and on part of sternopleuron; posterior mesopleural fringe golden 11
– Pleural hairs entirely or largely black; posterior mesopleural fringe brown to black 13
11. Mesothoracic spiracle dark brown to black ..... *I. delectans*
– Mesothoracic spiracle bright yellow to golden 12
12. Tergites 3–4 with neither marginal band nor median stripe; wings hyaline, sometimes slightly infuscated apically in ♀; parafrontalia in ♀ subequal in width to frontal stripe at middle of frons; hind tibia without *av* in ♂ ..... *I. electa* (in part)
– Tergites 3–4 with distinct marginal bands and median stripe in ♂, and with broad, metallic-copper, marginal band in ♀; wing hyaline in ♂, fuscous-clouded apically in ♀; parafrontalia in ♀ about 1/2 as wide as frontal stripe at middle of frons; hind tibia with 1 *av* in ♂ ..... *I. borneensis* (in part)
13. Alar and thoracic squama wholly dark brown to black. ..... *I. oestracea*
– Alar and thoracic squama white at least at base 14
14. Alar squama white at least on basal half; thoracic squama white at base; large species, 10.0–11.0 mm in length ..... *I. pictifacies*

– Alar and thoracic squama wholly white in ♀, alar one brownish, white only anteroventrally, and thoracic one usually brown in ♂; small species, 7.0–9.0 mm in length. No record from Indochina.....*I. facialis* James, 1970

15. Basicosta yellow .....*I. pseudonepalana*

– Basicosta fuscous to black 16

16. Mesopleuron entirely or largely covered with black hairs, and with several yellow ones only on lower margin 17

– Mesopleuron clothed with black hairs, but largely with yellow ones along posterior margin in lower third to half.....18

17. Mesopleuron entirely covered with black hairs, and with row of long, black hairs along posterior margin. No record from Indochina..... .....*I. pseudoviridana* (Peris, 1952)

– Mesopleuron clothed with yellow hairs on small lower part, and with row of yellow pilosity along posterior margin. No record from Indochina ....*I. versicolor*

18. Parafacialia in profile narrower than width of 3rd antennal segment; parafacial setulae fine and white, shorter than width of 3rd antennal segment..... .....*I. fulvicornis*

– Parafacialia in profile 1.5–2.0 × as wide as 3rd antennal segment; parafacial setulae usually black or, if practically white in some, longest ones exceeding width of 3rd antennal segment. No record from Indochina ....*I. hetauda* Kurahashi, 1994

19. Thoracic squama lobulate inwards; setulae of subcostal sclerite white below, very fine; mesopleural, and pteropleural as well, hairs yellow. No record from Indochina .....*I. cupreoviridis* (Malloch, 1928)

– Thoracic squama not lobulate; setulae of subcostal sclerite black below; mesopleural hairs black.....20

20. Sternopleuron and pteropleuron largely covered with yellow hairs; hairs around *pst* yellow; squamae brown, but pale at anterior basal part of alar one... .....*I. isomyia*

– Sternopleural and pteropleural hairs fuscous to black; hairs around pst black and yellow; alar squama entirely brownish, concolorous with thoracic one ....*I. dotata*

**Isomyia aurifacies* James, 1970

Isomyia aurifacies James, 1970: 9. Type locality: Tinsukia, Assam, India.

Length. 8.5–12.0 mm.

Specimens examined. VIETNAM: 2♂, M'Drak, E of Ban Me Thout, 4[00]–600 m, 8–19.xii.1960, C. M. Yoshimoto (BPBM); 1♂, Dalat, 1,500 m, 29.iv.–4.v.1960, S. Quate (BPBM).

Bionomics. Nothing is known.

Distribution. *Vietnam and India.

**Isomyia borneensis* (Peris, 1951)

Thelychaeta borneensis Peris, 1951: 247. Type locality: Mount Dulit, Sarawak, Borneo [Malaysia].

Length. 9.0–11.0 mm.

Specimens examined. VIETNAM: 1♀, Dalat, 1,500 m, 29.iv.–4.v.1960, L. W. Quate (BPBM); 1♂, Dilinh (Djiring), 27.ix.–14.x.1960, C. M. Yoshimoto (BPBM). LAOS: 1♂, Vientiane Prov., Ban Van Eue, 15.iv.1966, native collector (BPBM).

Bionomics. Nothing is known.

Distribution. *Vietnam, *Laos, Malaysia (as Malaya, Sarawak), and Indonesia (Sumatra).

**Isomyia ceballosi* (Peris, 1951)

Thelychaeta ceballosi Peris, 1951: 246. Type locality: Mount Dulit, Sarawak, Borneo [Malaysia].

Length. 14.0 mm.

Specimen examined. VIETNAM: 1♀, 17 km S of Dilinh, 1,300 m, 6–13.x.1960, C. M. Yoshimoto (BPBM).

Bionomics. Nothing is known.

Distribution. *Vietnam, Malaysia (Sarawak), and Myanmar.

Isomyia chrysoides (Walker, 1856)

Musca chrysoides Walker, 1856: 23. Type locality: Malacca, Malaya [Malaysia].
Isomyia chrysoides: James 1977: 547 (Vietnam).

Specimens examined. No available material in our collection.

Distribution. Vietnam, Malaysia (as Malaya, Sabah), and Indonesia (Java).

Isomyia cybele (Séguy, 1949)

Apollenia cybele Séguy, 1949: 120. Type locality: Kouling, China and Muang-om, Laos.
Isomyia cybele: James, 1977: 548 (Laos).

Specimens examined. No available material in our collection.

Bionomics. Nothing is known.

Distribution. China and Laos.

Isomyia delectans Walker, 1860

Isomyia delectans Walker, 1860: 134. Type locality: Makasar, Celebes [Indonesia].
Isomyia delectans: Séguy, 1949: 137 (Laos); James, 1977: 548 (Laos).

Length. 10.0–10.5 mm.

Specimens examined. VIETNAM: 1♀, Blao (Balao), 500 m, 14–21.x.1960, C. M. Yoshimoto (BPBM); 1♀, 25 km SW of Pleiku, 400 m, 12.v.1960, L. W. Quate (BPBM); 1♀, Mt. Lang Bian, 1,500–2,000 m, 19.v.–8.vi.1961, N. R. Spencer (BPBM); 1♀, Dalat, 1,500 m, 29.iv.–4.v.1960, L. W. Quate (BPBM). LAOS: 3♀, Muong Sing, NW of Luang Prabang, 650 m, 6–10.vi.1960, L. W. Quate (BPBM).

Bionomics. Nothing is known.

Distribution. Philippines, *Vietnam, Laos, Indonesia, Myanmar, and India.

Isomyia didieri (Séguy, 1949)

Apollenia didieri Séguy, 1949: 121. Type locality: Cambodia.
Isomyia didieri: James 1977: 548 (Cambodia).

Specimens examined. No available material in our collection.

Bionomics. Nothing is known.

Distribution. Cambodia.

**Isomyia dotata* (Walker, 1856)

Musca dotata Walker, 1856: 25. Type locality: Singapore, Malaya [Singapore].

Length. 7.5–8.0 mm.

Specimens examined. VIETNAM: 1♂, Mt. Lang Bian, 1,500–2,000 m, 19.v.–8.vi.1961, N. R. Spencer (BPBM); 1♂, Fyan, 900–1,000 m, 11.vii.–9.viii.1961, N. R. Spencer (BPBM). LAOS: 1♂, Vientiane Prov., Ban Van Eue, 14–15.iv.1965, J. L. Gressitt (BPBM).

Bionomics. Nothing is known.

Distribution. Philippines (Mindanao, Mindoro, Luzon), *Vietnam, *Laos, Thailand, Malaysia (as Malaya and Borneo), Singapore, Indonesia (Java), and Myanmar.

Isomyia electa (Villeneuve, 1927)

Thelychaeta electa Villeneuve, 1927: 217. Type locality: Kosempo, Taihorinsho, and Tappani [Tappan], Formosa [Taiwan].
Isomyia electa: Thinh 1988: 16 (Vietnam); Xue and Chao 1996: 1485 (Cambodia).

Specimens examined. No available material in our collection.

Distribution. Taiwan, Vietnam, Cambodia, Malaysia (as Malaya), Myanmar,

Nepal, and India (Tamil Nadu).

**Isomyia fulvicornis* (Bigot, 1887)

Phumosia fulvicornis Bigot, 1887: 611. Type locality: Java [Indonesia].

Length. 8.0–8.6 mm.

Specimens examined. VIETNAM: 4♂, Dak Song, 76 km SW of Ban Me Thuot, 870 m, 19–21.v.1960, L. W. Quate (BPBM); 1♂, Dalat, 1,550 m, 11.ix.1960, J. L. Gressitt (BPBM); 1♀, 17 km E of Dilinh, 1,300 m, 6–13.x.1960, C. M. Yoshimoto (BPBM).

Bionomics. Nothing is known.

Distribution. *Vietnam, Malaysia (as Malaya and Borneo), Indonesia (Java), India, and Sri Lanka.

Isomyia inops (Séguy, 1949)

Apollenia inops Séguy, 1949: 122. Type locality: Annam [Vietnam].
Isomyia inops: James 1977: 549 (Vietnam).

Specimens examined. No available material in our collection.

Bionomics. Nothing is known.

Distribution. Vietnam.

Isomyia isomyia (Séguy, 1946)

Strongyloneura isomyia Séguy, 1946: 86. Type locality: Dang He, Laos.
Apollenia isomyia: Séguy 1949: 122 (Laos).
Isomyia isomyia: James 1977: 549 (Laos); Xue and Chao 1996: 1494 (Laos); Fan 1997: 535 (Laos).

Length. 8.0–9.3 mm.

Specimens examined. VIETNAM: 1♀, Fyan, 900–1,000 m, 11.vii.–9.viii.1961, N. R. Spencer (BPBM). LAOS: 5♂, Phou Kou Khouei, Ban Van Eue, 13.iv.1965, 15.iv.1965, J. L. Gressitt (BPBM).

Bionomics. Nothing is known.

Distribution. China (Hainan I., Yunnan), *Vietnam, and Laos.

**Isomyia lugubris* James, 1970

Isomyia lugubris James, 1970: 4. Type locality: Kao Chong, Kuong Pen., Thailand.

Length. 11.5 mm.

Specimen examined. LAOS: 1♀, Vientiane Prov., Vientiane, 25.iii.1966, J. and M. Sedlacek (BPBM).

Bionomics. Nothing is known.
Distribution. *Laos and Thailand.

Isomyia nebulosa (Townsend, 1917)

Strongyloneura nebulosa Townsend, 1917: 197. Type locality: Assam, India, and Lower Burma [Myanmar].
Strongyloneura pavonica Séguy, 1946: 86. Type locality: Vien Poukha and Pou Lan, Laos.
Thelychaetopsis pavonina: Séguy 1949: 140 (Laos).
Isomyia nebulosa: James 1977: 549 (Laos); Xue and Chao 1996: 1484 (Laos, Cambodia); Fan 1997: 532 (Laos).

Specimens examined. No available material in our collection.
Bionomics. Nothing is known.
Distribution. Laos, Cambodia, Myanmar, and India (Assam).

Isomyia oestracea (Séguy, 1934)

Pachycosmina oestracea Séguy, 1934: 18. Type locality: Kou-Ling, China.
Isomyia oestracea: Séguy 1949: 138 (Laos); James 1977: 550 (Laos); Fan 1992: 573 (Laos); Xue and Chao 1996: 1487 (Laos, Cambodia); Fan 1997: 548 (Laos).

Specimens examined. No available material in our collection.
Bionomics. Nothing is known.
Distribution. China, Laos, Cambodia, Malaysia (as Malaya, Sabah), Indonesia (Java), and India.

**Isomyia perisi* James, 1970

Isomyia perisi James, 1970: 10. Type locality: Kadamparai, Anamalai Hills, Madras, India.

Length. 11.0 mm.
Specimen examined. VIETNAM: 1♀, Dilinh, 27.ix.–14.x.1960, C. M. Yoshimoto (BPBM).
Bionomics. Nothing is known.
Distribution. *Vietnam and India (Tamil Nadu).

Isomyia pictifacies (Bigot, 1877)

Somomyia pictifacies Bigot, 1877: 45. Type locality: Java [Indonesia].
Thelychaeta pictifacies: Peris 1952: 161 (Laos).
Isomyia pictifacies: James 1977: 550 (Laos).

Length. 9.0–11.0 mm.

Specimens examined. VIETNAM: 1♀, 10 km E of Ban Me Thout, 570 m, 10.v.1960, R. E. Leech (BPBM); 1♀, 22 km S of Nha Trang, 20–26.xi.1960, C. M. Yoshimoto (BPBM); 3♂ 1♀, 17 km S of Dilinh, 1,300 m, 6–13.x.1960, C. M. Yoshimoto (BPBM); 1♂, 17 km S of Dilinh, 1,300 m, 6–13.x.1960, C. M. Yoshimoto (BPBM); 2♂, Blao (Balao), 500 m, 14–21.x.1960, C. M. Yoshimoto (BPBM); 1♀, M'Drak, E of Ban Me Thout, 4[00]–600 m, 8–19.xii.1960, C. M. Yoshimoto (BPBM); 1♀, Ap Hung-Lam, 21 km NW of Dilinh, 1,100 m, 29.ix.–5.x.1960, C. M. Yoshimoto (BPBM). LAOS: 1♀, Muong Sing, NW of Luang Prabang, 650 m, 6–10.vi.1960, L. W. Quate (BPBM).

Bionomics. Nothing is known.

Distribution. *Vietnam, Laos, Malaysia (as Malaya, Sabah), and Indonesia (Java).

Isomyia proxima (Séguy, 1846)

Strongyloneura proxima Séguy, 1846: 87. Type locality: Xieng Khuong, Laos.
Thelychaetopsis proxima: Séguy 1949: 141 (Laos).
Isomyia proxima: James 1977: 550 (Laos).

Specimens examined. No available material in our collection.
Bionomics. Nothing is known.
Distribution. Laos.

Isomyia pseudolucilia (Malloch, 1928)

Strongyloneura pseudolucilia Malloch, 1928: 1. Type locality: Mount Omei, Szechuen, China.
Thelichaetopsis pseudolucilia: Séguy 1949: 141 (Laos); James 1977: 550 (Vietnam, Laos); Xue and Chao 1996: 1488 (Vietnam, Laos); Fan 1997: 543 (Vietnam, Laos).

Specimens examined. No available material in our collection.
Bionomics. Nothing is known.
Distribution. China (Sichuan), Vietnam, and Laos.

****Isomyia pseudonepalana*** (Senior-White, Aubertin and Smart, 1940)

Strongyloneura pseudonepalana Senior-White, Aubertin and Smart, 1940: 162. Type locality: Kekirawa, Ceylon [Sri Lanka].
Strongyloneura nepalana: Senior-White 1922: 100 (Sri Lanka). [Misidentified]
Isomyia pseudonepalana: Xue and Chao 1996: 1485 (Cambodia).

Length. 7.5–8.4 mm.

Specimens examined. VIETNAM: 2♀, M'Drak, E of Ban Me Thuot, 4[00]–600 m, 8–19.xii.1960, C. M. Yoshimoto (BPBM); 3♀, 17 km S of Dilinh, 1,300 m, 6–13.x.1960, C. M. Yoshimoto (BPBM); 1♀, 3 km S of Dilinh (Djiring), 1,050 m,

29.iv.1960, R. E. Leech (BPBM); 1♀, Fyan, 900–1,000 m, 11.vii.–9.viii.1961, N. R. Spencer (BPBM).

Bionomics. Nothing is know.

Distribution. China (Hainan I.), *Vietnam, Cambodia, Malaysia (as Malaya), Myanmar, India, and Sri Lanka.

Isomyia viridana (Townsend, 1917)

Strongyloneura viridana Townsend, 1917: 197. Type locality: Calcutta, and Sadiya, Assam, India.
Thelichaeta viridana: Séguy 1946: 85 (Laos).

Taxonomic status of this species still remains uncertain. We tentatively include it in the genus *Isomyia*.

Specimens examined. No available material in our collection.

Bionomics. Nothing is known.

Distribution. Laos and India (Assam, W. Bengal).

Isomyia viridaurea (Wiedemann, 1819)

Musca viridaurea Wiedemann, 1819: 22. Type locality: Java [Indonesia].
Thelychaeta chalybea Brauer and Bergenstamm, 1891: 390. Type locality: Borneo [Malaysia].
Isomyia viridaurea: Séguy 1949: 139 (Laos); James 1977: 551 (Vietnam, Laos); Xue and Chao 1996: 1488 (Vietnam, Laos); Fan 1997: 538 (Vietnam, Laos).

Length. 9.5–12.5 mm.

Specimens examined. VIETNAM: 2♀, Dilinh, 1,020 m, 2.v.1960, 27.ix.–14.x.1960, R. E. Leech and C. M. Yoshimoto (BPBM); 1♀, 20 km N of Pleiku, 650 m, 9.v.1960, L. W. Quate (BPBM); 1♀, 40 km N of Dilinh, 500 m, 26.iv.1960, R. E. Leech (BPBM); 1♀, Ban Me Thout, 500 m, 16–18.v.1960, S. Quate (BPBM); 1♀, Kontum, N of Pleiku, 550 m, light trap, 13.v.1960, R. E. Leech (BPBM); 2♂, 22 km S of Nha Trang, 20–16.xi.1960, C. M. Yoshimoto (BPBM); 1♀, 20 km S of Dalat, 1,300 m, 12.ix.1960, J. L. Gressitt (BPBM). LAOS: 1♀, Ban Van Heue, 20 km E of Phou-kow-kuei, 15–31.v.1965, J. A. Rondon (BPBM); 3♂ 1♀, Sayaboury, 25.viii.1966, native collector (BPBM); 2♂ 3♀, Vientiane Prov., Ban Van Eue, 31.vii.1965, 30.ii.1967, native collector (BPBM); Uekinak, nr Pakkading, 100 m, 22.iv.1965, J. L. Gressitt (BPBM); 1♀, Luang Prabang, 300 m, 4–5.vi.1960, L. W. Quate (BPBM); 1♂ 1♀, Ban Na Pheng, 19.v.1968, native collector (BPBM); 1♀, Vientiane, 31.v.–3.vi.1960, S. Quate and L. [W.] Quate (BPBM).

Bionomics. Nothing is known.

Distribution. Taiwan, Philippines (Luzon), Vietnam, Laos, Thailand, Malaysia (as Malaya and Borneo), Indonesia (Sumatra, Java, Bali), Myanmar, and India.

Genus *Strongyloneura*

Strongyloneura Bigot, 1886: 14. Type species: *Strongyloneura prasina* Bigot, 1886, by monotypy.

Strongyloneura prolata (Walker, 1860)

Idia prolata Walker, 1860: 133. Type locality: Makasar, Celebes [Indonesia].
Isomyia prasina: Thinh 1988: 16 (Vietnam). [Misidentified]

Length. 5.7–6.0 mm.

Specimens examined. VIETNAM: 1♂, M'Drak, E of Ban Me Thuot, 4[00]–600 m, 8–19.xii.1960, C. M. Yoshimoto (BPBM); 1♀, 25 km SW of Pleiku, 400 m, human feces, 12.v.1960, L. W. Quate (BPBM). LAOS: 1♀, Vientiane Prov., Ban Van Eue, 750 m, forest streambed, Malaise trap, 10–11.iv.1965, J. L. Gressitt (BPBM); 5♀, Wapikhamthong Prov., Wapi, 15.x.1957, native collector (BPBM); 1♂, Savannakhet Prov., Savannakhet, 15.iii.1967, native collector (BPBM); 1♂, Vientiane Prov., Tha Ngone, 21.viii.1965, native collector (BPBM).

Bionomics. Nothing is known.

Distribution. Japan (Ryukyu Is.), China (Hainan I., Tibet), Vietnam, *Laos, Malaysia (as Malaya), Indonesia (Sulawesi), Myanmar, Nepal, and India.

Genus *Rhyncomya*

Rhyncomya Robineau-Desvoidy, 1830: 424. Type species: *Musca felina* Robineau-Desvoidy, 1794, by monotypy.

Rhyncomya flavibasis (Senior-White, 1922)

Metallea flavibasis Senior-White, 1922: 168. Type locality: Suduganga, Matale, Ceylon [Sri Lanka].
Rhyncomya setipyga Villeneuve, 1929: 62. Type locality: Koshun, Formosa [Taiwan].
Rhyncomya setipyga: Thinh 1988: 16 (Vietnam).

Length. 4.0–6.0 mm.

Specimens examined. VIETNAM: 2♀, Blao (Balao), 600 m, 14–21.x.1960, C. M. Yoshimoto (BPBM); 1♀, Plateau G., 63 km NE of Kontum, 1,170 m, 11–12.vi.1960, R. E. Leech (BPBM); 2♀, 6 km S of Dalat, 1,400–1,500 m, 9.vi.–7.vii.1961, S. Quate (BPBM); 1♀, 25 km S of Pleiku, 400 m, 12.v.1960, L. W. Quate (BPBM); 1♂ 2♀, Fyan, 900–1,000 m, 1,200 m, 11.vii.–9.viii.1961, N. R. Spencer (BPBM); 1♂ 1♀, Kontum, N of Pleiku, 550–570 m, 13.v.1960, 13–14.vi.1960, R. E. Leech (BPBM); 1♀, M'Drak, E of Ban Me Thout, 4[00]–600 m, 8–19.xii.1960, C. M. Yoshimoto (BPBM); 1♀, Dalat, 1,500 m, 29.iv.–4.v.1960, L. W. Quate (BPBM); 1♂, 30 km N of Pleiku, 300 m, 10.v.1960, S. Quate and L. [W.] Quate (BPBM); 1♂, 20 km N of Pleiku, 650 m, 9.v.1960, S. Quate

(BPBM). LAOS: 1♂, Borikhane Prov., Paksane, 22.xii.1965, native collector (BPBM); 4♂, Vientiane Prov., de Tha Ngone, Gi Sion Vill., 10–30.i.1966, native collector (BPBM).

Bionomics. Nothing is known.

Distribution. Taiwan, Philippines (Luzon, Busuanga Is., Palawan, Negros, Mindanao), Vietnam, *Laos, Nepal, India (Uttar Pradesh), and Sri Lanka.

Genus *Metallea*

Metallea van der Wulp, 1880: 174. Type species: *Metallea notata* van der Wulp, 1880, by monotypy.

Key to the species of *Metallea*

1. Parafacialia broader than 2× width of 3rd antennal segment in profile; abdominal tergites 3 with large, black lateral spots and broad median stripe in both sexes; eyes in ♂ separated by 2.5–3.0× width of anterior ocellus; tergite 5 entirely or largely submetallic in ♀ ..... *M. producta*
– Parafacialia narrower than 1.5× width of 3rd antennal segment in profile; abdominal tergite 3 only with small, median black spot in ♀; conditions of eyes in ♂ and of tergite 5 in ♀ variable 2
2. Parafacialia testaceous, with shiny black spot below, clothed with 2–3 irregular rows of black setulae in both sexes ..... *M. setosa*
– Parafacialia testaceous, slightly reflective below, but without black spot, virtually bare in ♂, with minute fuscous to black setulae in ♀ 3
3. Eyes in ♂ separated by more than 2× width of anterior ocellus; tergite 5 largely testaceous in ♀ ..... *M. ciliilunula*
– Eyes in ♂ closely approximated, separated by distance slightly more than width of anterior ocellus; tergite 5 largely submetallic in ♀ ..... *M. erinacea*

**Metallea ciliilunula* Fang and Fan, 1984

Metallea ciliilunula Fang and Fan, 1984: 262. Type locality: Chaoan, Guangdong, China.

Setulose lunule was mentioned to be characteristic of this species in the original description, but the specimens from Laos have a bare lunule.

Length: 7.0–9.0 mm.

Specimens examined. LAOS: 1♂ 1♀, Sayaboury Prov., Sayaboury, 24.iii.1966, native collector (BPBM).

Bionomics. Nothing is known.

Distribution. China (Guangdong) and *Laos.

**Metallea erinacea* Fang and Fan, 1984

Metallea erinacea Fang and Fan, 1984: 262. Type locality: Zhejiang Prov., China.

Length. 5.5–7.0 mm.

Specimens examined. VIETNAM: 1♂, Dak Song, 76 km SW of Ban Me Thout, 870 m, 19–21.v.1960, L. W. Quate and S. Quate (BPBM); 1♀, Dak Song, 76 km SW of Ban Me Thout, 870 m, 19–21.v.1960, L. W. Quate and S. Quate (BPBM); 5♀, Plateau G., 63 km NE of Kontum, 1,170 m, 11–12.vi.1960, R. E. Leech (BPBM). LAOS: 1♂, Vientiane Prov., Ban Van Eue, 750 m, forest streambed, 10–11.iv.1965, 15.i.1966, J. L. Gressitt and native collector (BPBM); 1♂, Luang Prabang, 300 m, 4–5.vi.1960, L. W. Quate (BPBM); 1♂ 3♀, Wapikhamthong Prov., Wapi, 31.v.1967, native collector (BPBM); 1♀, Phou-kow-huei, N of Vientiane, 800 m, 10.iv.1965, J. L. Gressitt (BPBM); 1♀, Ban Theuong, 18 km NW of Xieng Khouang, 1,035 m, 2–6.viii.1960, R. E. Leech (BPBM); 1♀, Ban Van Heue, 20 km E of Phou-kow-kuei, Malaise trap, 1–15.v.1965, J. A. Rondon (BPBM).

Bionomics. Nathing is known.

Distribution. China (Zhejian), *Vietnam, *Laos, Malaysia (as Malaya and Borneo), and Singapore.

Metallea minuta Séguy, 1946

Metallea minuta Séguy, 1946: 89. Type locality: Song Hac, Laos.

The taxonomic status of this species is uncertain and in need of revision after examination of the type specimen. We tentatively include this form in the genus *Metallea*.

Specimens examined. No available material in our collection.

Bionomics. Nothing is known.

Distribution. Laos.

****Metallea producta*** Fang and Fan, 1984

Metallea producta Fang and Fan, 1984: 262. Type locality: Hainan, China.

Length. 9.2–10.0 mm.

Specimens examined. VIETNAM: 1♂, Ap Hung-Lam, 21 km NW of Dilinh, 1,100 m , 29.ix.–5.x.1960, C. M. Yoshimoto (BPBM); 5♀, Dak Song, 76 km SW of Ban Me Thout, 870 m, 19–21.v.1960, L. W. Quate and S. Quate (BPBM); 3♀, 20 km N of Pleiku, 650 m, 9.v.1960, L. W. Quate (BPBM); 1♀, 50 km SW of Pleiku, 250 m, 14.v.1960, L. W. Quate (BPBM); 1♀, 15 km NW of Dalat, 1,850 m, 5.v.1960, L. W. Quate (BPBM);1♀, Dalat, 1,500 m, 29.iv.–4.v.1960, S. Quate and L. [W.] Quate (BPBM); 1♀, Dilinh (Djiring), 1,200 m, 22–23.iv.1960, L. W. Quate (BPBM); 1♂, Mt. Lang Bian, 1,500–2,000 m, 9.v.–8.vi.1961, N. R. Spencer (BPBM). LAOS: 1♀, Vientiane Prov., Ban Van Eue, 750 m, forest streambed, 10–11.iv.1965, J. L. Gressitt and native collector (BPBM).

Bionomics. Nothing is known.

Distribution. China (Yunnan, Guangdong, Hainan I.), *Vietnam, and *Laos.

**Metallea setosa* (Townsend, 1917)

Metalliopsis setosa Townsend, 1917: 198. Type locality: Kurseong, Darjeeling, India.

Length. 7.5 mm.

Specimens examined. VIETNAM: 1♂, 6 km S of Dalat, 1,000–1,500 m, 9.vi.–7.vii.1961, N. R. Spencer (BPBM); 1♀, Plateau G., 63 km NE of Kontum, 1,170 m, 11–12.vi.1960, R. E. Leech (BPBM). LAOS: 1♀, Phou-kow-huei, N of Vientiane, 800 m, 10.iv.1965, J. L. Gressitt (BPBM).

Bionomics. Nothing is known.

Distribution. China (Fujian, Yunnan, Guangdong, Tibet), *Vietnam, *Laos, Malaysia (as Malaya), Nepal, and India (W. Bengal).

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